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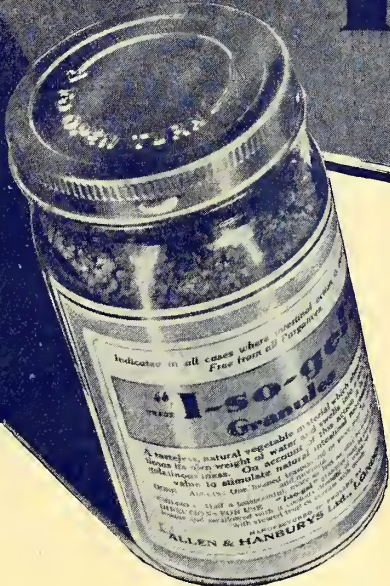
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No. 2694.

SEPTEMBER 26, 1931.

Vol. CXV.



"I-so-gel" Granules

Indicated in
**Chronic Constipation,
Colitis,
and allied Intestinal Disorders**

'I-so-gel' is a natural vegetable material. The granules absorb many times their volume of water and swell into a gelatinous mass which both stimulates natural intestinal movements and soothes inflamed intestinal mucous membrane.

Action purely mechanical. Sugar-free.
Ideal for diabetics.

In Jars :
Retail Wholesale
2/6 each 20/- per doz.
4/6 " 36/- " "

Descriptive literature will be
sent on request.

Allen & Hanburys Ltd.
London, E. 2

Telephone No. 3201 (ten lines) BISHOPSGATE.

Telegraphic Address: "GREENBURYS BETH LONDON"



*We shall be most happy to share
our great success with you!*

Harriet Hubbard Ayer are proud to think that their beauty preparations have—in so short a space as three years—established themselves firmly in the favour of discriminating British women. Important retailers all over the country are finding it pays them well to stock the whole range—and, lately, have found it necessary to carry larger supplies.

We can, we think, attribute their success to three things. First, the outstanding quality of Harriet Hubbard Ayer preparations, and the obvious improvement every woman notices in her looks after she has used them for a very short time. Second, their very real economy—for each cream and lotion combines in itself more than one function—LUXURIA, for instance, is a cleanser, a skin food and a bleacher, all in one. Lastly, widespread, judicious advertising in the National Press and in the most fashionable women's periodicals.

By linking up with Harriet Hubbard Ayer now you will be doing a really sound thing for your business. You will identify yourself with an established success—and be in a position to offer your customers a product which never fails to please them.

Write to Harriet Hubbard Ayer Ltd., 130 Regent Street, W.1, for a comprehensive catalogue and terms. Or, better still, call in and see our spacious new showrooms and we will gladly give you all particulars personally.

The retail prices for the famous LUXURIA Cream are 2/3, 4/=-, 8/6, 11/9.

HARRIET HUBBARD AYER

Beauty Preparations

LTD

PARIS

LONDON

NEW YORK

in £5 last-year can, season for £4 7s. 6d. was quoted to me by the manufacturer as being reductions this autumn.

aily, are low in price. I that a squirrel coat that the woman who bought it from the retailer about £49 recently procured for £29.

in a vague, uncertain way tremendous and distinctions, ed with dresses and coats of a city composed of representative of all different architecture. sheer freakish and, as I said, to the point of and

TISSUE.

though dress designers, whoopee on one occasion, and served up the most ridiculous possible in order to moods.

st variations are to be leaves. I defy any one to Olympia and find a dozen similar sleeves.

long, puffed, balloon-shaped; they are like military epaulettes—but no distinction of individual

returns to favour. Grand-teta is abundantly utilised. elvets contain the secret of flettes.

ocks with flat basques are the waist, but have produced. One model has a hood cape. It is known as the Hood."

IORE FUR.

is are not longer, but they fur. This fur is on the id of on the cuffs and on d collars.

re muddled. Their heads with demands for hats of unusual types. Their effort mall hats on the market mplicated slightly by the of Scotswomen towards ey refuse to be seen in are clamouring for large rge heads.

on women will find the new hats charming. Tri-Marie Stuarts—little hats e saucepan lids with three s beneath the curled brim can wear a new hat every week and adopt a different

RIOTS IN BENGAL
Express" Corre-

MBAY, M-

s of

IT SELLS FROM SEVEN AND SIX

THE NEW WILKINSON RAZOR NOW ADVERTISED TO A MARKET OF 15,000,000 MEN

quilted
swallow
Ellis
six-foot
peeped
material
g lady
back are
Your fat
totter under
said, the be
Any frock
a body inside
quite outside it.

The fashionable
to be a combina
rickets. How the
walk in their silks
There is a fascina
the makers of women
never makes right
never makes sleeves
makes apparently not

I noticed that wails
round the neck or a
chio thing is not to wa
except for a slight suga
region of the left armpit.

At this exhibition there
little kiosks garrisoned by m
and packed with silken s
visited one.
"Would you like to see our m
smiled a suave gentleman with
in his mouth.

"I would."
He clapped his hands and she ente
She was glorious—one of those
possibly pretty blondes, and she
sheathed in cloth of gold from ne
ankles.

"Well?" said the suave
"Ripping," I gasped
"Can I tell you
he inquired.

"Address
whispered ho
"I am speak
the suave gem
"Moron," I h
Wonderful we
drift by you al
dors of this show
rant with fleeting
building bright w
eyes.

What a
clothes



Keep a Good Stock of These Pre-eminent Hair Toilet Preparations

HARLENE Hair Toilet Preparations are Pre-eminent for their Quality and Efficacy. And the Public are told this week after week in millions of copies of the biggest National Newspapers in the country. By a forceful and regular extensive Advertising

Campaign HARLENE Preparations are always kept right in the public eye, and the Public BUYS. Therefore it behoves YOU to keep a good stock of these popular Hair Toilet Requisites always on hand. Among the HARLENE range the most Popular are

"Harlene"

HAIR GROWER & TONIC

"CREMEX" Shampoo Powders

"U Z O N"

Brilliantine

"HARLENE"

Wave - Setting Lotion

"ASTOL"

For Grey Hair

"HARLENE"

Hair Fixative

NOTE

Terms to the Trade are Generous, and you know that when you stock Harlene Preparations they are never left "on the shelf."

Please address all communications to the Company as under.

NOTE

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20-26 Lamb's Conduit St., London, W.C.

GET READY NOW

for the COTY CREAM DRIVE

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These new Presentations will be vigorously advertised to the public, *once you are in possession of your stocks*. See to it that you are ready. The Public has long been waiting for these lines, and consequently sales will soon be forthcoming. Get your share!

Look

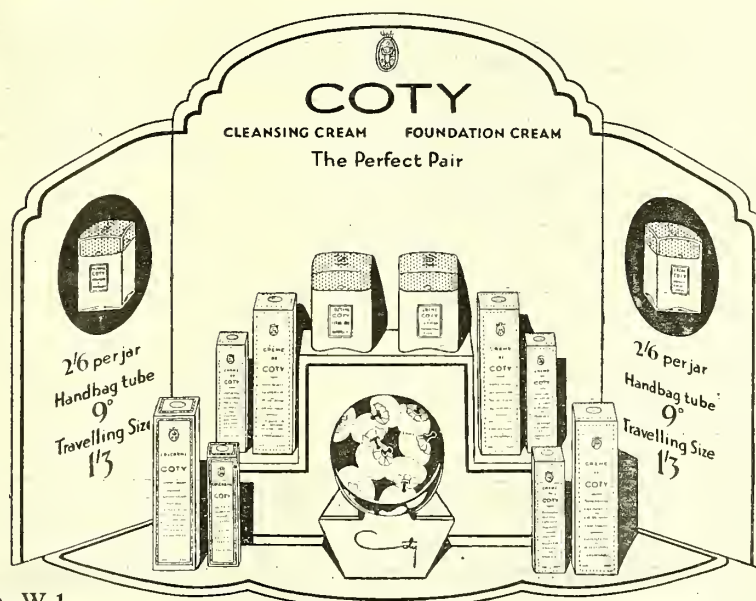
in your Circular for all particulars regarding Show Material to back up this Campaign. An attractive cut-out Screen is sent with all orders including a full assortment of the new Cream and Colcreme Presentations.



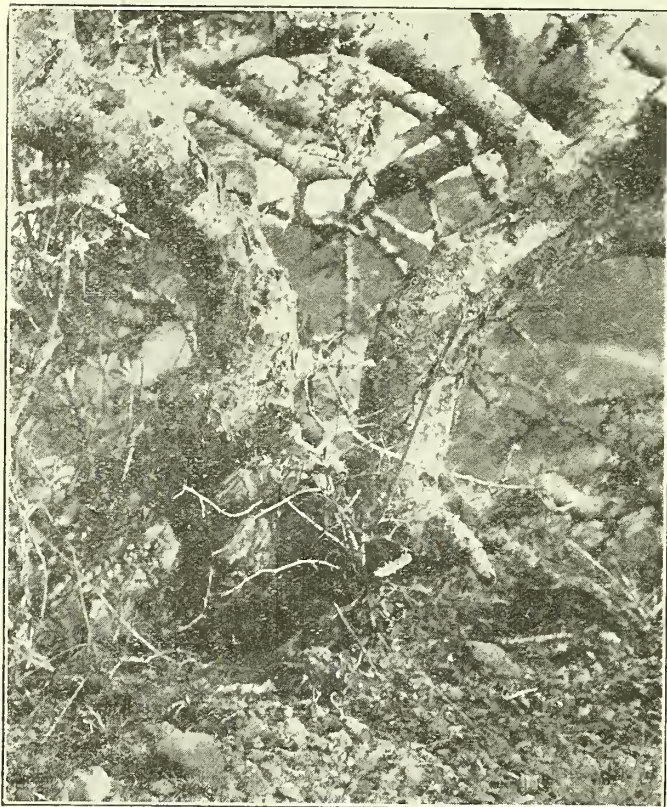
COTY (England) Ltd.
COTY HOUSE,
3, Stratford Place, London. W.1.

Telephone : Mayfair 7244-49.

Telegrams : Paricoty, Phone, London.



The Romance of Empire Drugs (12)



Dhidin (Myrrh) Tree, *Balsamodendron myrrha*, on the Gubon (Somaliland), shewing bruise made by the Somoli (near trunk base) to promote exudation of the gum.

(From the Government of the Somaliland Protectorate.)

MYRRH is an oleo-gum-resin, obtained from the Dhidin tree (*Balsamodendron myrrha*), indigenous to North Eastern Africa and Southern Arabia, the name being derived from the Hebrew and Arabic *Mur*, meaning bitter.

The use of the product goes back to very early times. It was a common ingredient of the incense, perfumes and other unguents which played an important part in Hebrew ritual.

The almost amorphous lumps of Myrrh vary in size, from small granules to amounts as large as an egg. The product is very brittle and when pieces are fractured they display an unctuous character internally and a dark brown colour. Myrrh exudes both spontaneously from, and as a result of artificial bruising of, the bark. It possesses

MYRRH

SOMALILAND

Staff Allen & Sons

employ from time to time practically every article in materia medica, including the use of Myrrh in the manufacture of pharmaceutical and perfumery products.

Est.  1833.

Wholesale Trade Only

a distinctive, pleasant odour, and an aromatic, bitter taste. The product is exported from Somaliland and Aden, where it is put into bales and shipped to Bombay, there to be sorted into best quality for despatch to Europe, and lower grades for use in the Chinese trade.

Myrrh is official in the B.P. and U.S.P. being valued on account of its aromatic and carminative properties. It is frequently prescribed in mouth washes and gargles, and is a common ingredient in dentifrices. It also finds a useful place in perfumery.

STAFFORD ALLEN & SONS LTD

Manufacturing Chemists, Essential Oil Distillers.
COWPER STREET, LONDON, E.C.2.

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Elasto

Regd

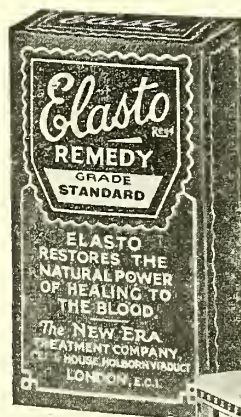
**For all Diseases
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Recommend "ELASTO" for Varicose Veins, Ulcers, Eczema, Swollen Legs, Phlebitis, Thrombosis, Muscular Weakness, Bad Legs, Piles, Prolapsus, Varicocele, Hardened Arteries, Blood Pressure, Deficient Circulation and kindred ailments.

**Elasto may be relied upon to
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fostered by consistent advertising**
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**Elasto
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Salve**

3/- a box

Wholesale

27/- a doz.

**Elasto
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(One month's supply)

Wholesale

45/- a doz.



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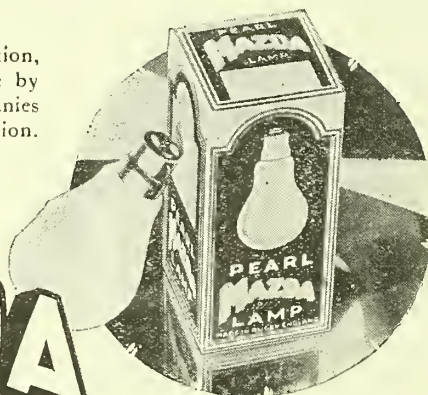
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This wonderful filament, which has given entire satisfaction, and has emerged triumphantly from every test made by independent laboratories, Traction and Shipping Companies and Government Departments, is a Mazda invention.

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MAZDA
LAMPS
WITH THE NON-SAG FILAMENT



25-40-60 WATTS 1/10
100-150 and 200-260 Volts **EACH**

Sold by
All Electrical Contractors,
Ironmongers and Stores.



MADE IN ENGLAND BY THE BRITISH THOMSON-HOUSTON CO., LTD.

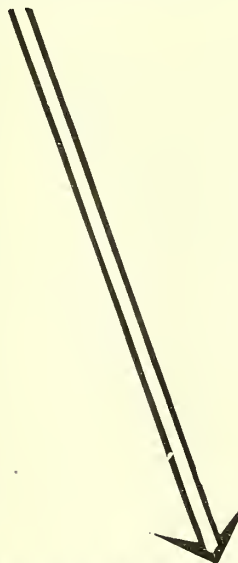


INDIA-RUBBER HOT WATER BOTTLES

BEFORE PLACING YOUR
SEASON'S ORDER, PLEASE
WRITE TO US FOR PRICES



MAY WE SEND YOU
A COPY OF OUR
GENERAL CATALOGUE
REVISED TO DATE ?



MAY, ROBERTS & CO. LTD.

7-13 CLERKENWELL ROAD

LONDON - - E.C.1

the bottle beautiful

in delightful colours to satisfy all!

Because of the delightful modern design, the rich colours, and the excellent finish, the Elastrong De Luxe Hot Water Bottle is in a class of its own. Made of the finest elastic rubber of great tensile strength the Elastrong De Luxe Bottle will give

lasting service. Every bottle undergoes a thorough inspection and pressure test immersed in water before despatch. There are no seams to split or hard edges to cause discomfort in use. A chromium-plated stopper with a wear-resisting base and washer is attached to the bottle by a safety chain.

Displayed in a unique form the Elastrong Bottle sells itself. This is the Chemists' Hot Water Bottle. It is price protected and carries a profit of 50% on your purchase price. Have a display in your window early and take advantage of the first cold snap.

A SPLENDID SECOND LINE

Where competition is keen or there is a demand for a cheaper bottle you should carry the Everlastic as a second line. Well made of high quality rubber. Moulded in one piece. Extra wide neck. In five colours and two sizes.

Retail Prices—Uncontrolled.

Trade Prices:—
3 qt. size 2/2 each
2 qt. size 2/- each

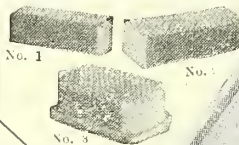


3 qt.

BETTER NAIL-BRUSHES

Made of pure crepe rubber, these modern nail-brushes are most efficient, effective and refreshing to use. They remove all ingrained dirt and massage as they clean. In three sizes and four colours.

Retail Prices—Type No. 1, 1/- ea. Type No. 2, 1/8, Type No. 3, 2/- ea. Trade dis. 33 1/3% (minim. 2 doz. lots)



No. 1

No. 2

No. 3



3 quart
(no ninal) size.

Retail Price 4/6 ea.

Trade Price 3/- ea.

This represents a protected profit of 50%

ST. HELENS

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Tear out this advertisement, attach to it your trade label and send for full details of these profitable lines.

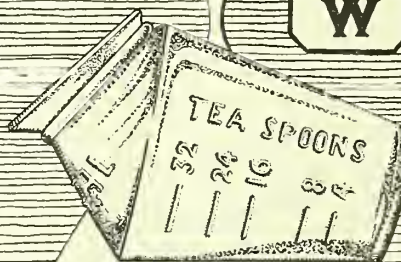
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ANY HOUR



THE IDEAL INVALID'S FEEDING CUP

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Made in best quality
clear glass.

PACKED IN AN ATTRACTIVE SHOW
CARTON.

For Sickness, Confinements &
Weaning of Infants the Ideal
Feeding Cup is the best.

A MOST USEFUL LINE TO STOCK.

Retail Price 9d. each.
Trade Price 6/- per doz.

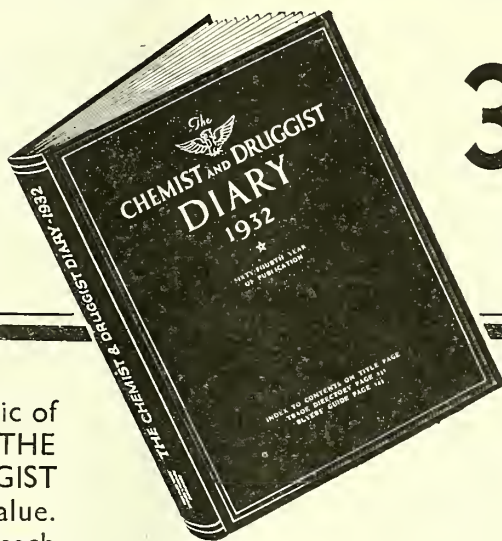
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WHOLESALE.

WOOD BROS. GLASS CO. LTD.
BARNLEY, ENGLAND

THE CHEMIST & DRUGGIST DIARY

1

9

64TH YEAR OF

3

2

PUBLICATION

¶ The special characteristic of an advertisement in THE CHEMIST AND DRUGGIST DIARY is its **permanent** value. Fresh Editorial features in each successive DIARY make it an authoritative reference book not for one year only but for many.

¶ The 1932 DIARY will contain, as usual, articles of the highest interest and importance to the Drug Trade, while the Trade Directory and Buyers' Guide sections (occupying 56 pages and containing over 18,000 references) will be more comprehensive than ever. Our Design Department is at the disposal of advertisers (free of obligation) for the preparation of sketch-suggestions and layouts in black and white, or in colour. All we require is a rough idea of the principal lines to be emphasised.

¶ It is imperative that manufacturers should keep their names and their products well

before the best buyers at Home and Overseas throughout the whole year, and as there will be a distribution of

**11,000 COPIES of the DIARY
ALL OVER THE WORLD**

the opportunity should not be missed to focus the attention of alert and worthwhile business men.

¶ As copies for Overseas subscribers have to be despatched in November,

**WE CLOSE FOR PRESS
ON OCTOBER 23rd, 1931.**

Advertisement copy for colour pages and special positions should be in the Publisher's hands a week before that date.

FULL PARTICULARS AND ADVERTISING RATES ON APPLICATION TO

THE PUBLISHER

THE CHEMIST & DRUGGIST

28 ESSEX STREET, STRAND, LONDON, W.C.2

BRANCHES: 4 CANNON STREET, MANCHESTER. 19 WATERLOO STREET, GLASGOW.
54 FOSTER'S BUILDINGS, SHEFFIELD. MELBOURNE AND SYDNEY (AUSTRALIA). AUCKLAND (NEW ZEALAND).

Sales this year already up 50%

AND NOW NEW POWERFUL ADVERTISING STARTS

reaching more millions of readers than ever before

MAKE YOUR STOCK READY FOR THE DEMAND

THIS Autumn and Winter leading popular magazines will carry Listerine Antiseptic advertising to their hundreds of thousands of readers. It will also appear in the most influential professional journals reaching doctors and nurses. In the great national newspapers, such as the "Daily Mail" and "Daily Express," it will continue *full force*—in as big space—as frequently to be seen as the dramatic advertising through the past few months which has sent sales up 50 per cent. already this year.

GREATEST SALES JUST AHEAD

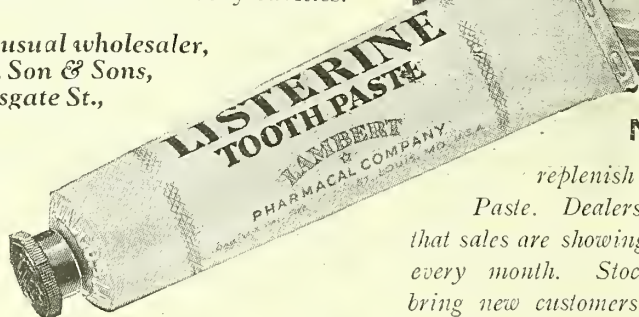
Consider—these next few months are the months when colds and sore throats become almost a universal complaint. And, at this very time, powerful advertising will make known the value of Listerine Antiseptic to prevent and relieve colds and sore throats. Prepare your stock of Listerine Antiseptic for the demand. Don't turn away customers because you are "just out."

WHEN YOU RECOMMEND

Recommend Listerine Antiseptic for colds and sore throats. "The Lancet" (September 21, 1929) states that it kills 200,000,000 germs in 15 seconds, and is perfectly safe for use in all body cavities.

Order from your usual wholesaler,
or from S. Maw, Son & Sons,
Ltd., 7-12 Aldersgate St.,
London, E.C.1.

Ask for one of the
attractive counter
cards—to remind
your customers
that they need
Listerine Anti-
septic and that
you have it.



NOW, TOO . . .

replenish your stock of Listerine Tooth Paste. Dealers all over the country report that sales are showing a large and steady increase every month. Stock it—display it—let it bring new customers regularly into your store.

LISTERINE

BRAND ANTISEPTIC

for colds, sore throats, and oral hygiene



'SUREGRIP'

The most practical and efficient shaver ever introduced: The Meritor Suregrip (Regd.). Evolved from Plasticine models of actual hand-grips. SAFETHANDLE in Morite, the new hygienic, non-inflammable, non-breakable material. Six brilliant plain colours. Has no crevices to harbour dirt or germs. STERILIZED KNOT of generous size, made on Maw's lock-knot principle, in six qualities of selected bristle. UNIQUE DISPLAY CASE in polished wood presents selling points, carries stock and sells automatically. STANDARD ASSORTMENT, 1 dozen brushes, with free case £3 5 6 all. Order at once for early delivery.

S. MAW SON & SONS, LTD.
LONDON AND BARNET

*We have minimised
production costs by
equipping our Works
with the most up-to-date
machinery.*

*These Tubes are of the
highest quality and
finish combined with
as low prices as any
house in the Trade.*



*Samples and
Quotations on
request.*

*Best Service and
Delivery.*

ESTABLISHED 1857

BETTS & CO. LTD.

1 WHARF ROAD, CITY ROAD,
LONDON, N.1.

HARVEY'S

Watts' Embrocation, or Curb Bottle.
Aconite Powders.
Worm & Condition Powders.
Watts' Red Lotion.
Hair-Restoring Ointment.
Edos, or Tasteless Purging Powder.

HARVEY'S

Great

*Protected Prices
(P.A.T.A.)*

Remedies for the Horse



HARVEY'S

Koppos Powder.
Parasiticide.
Thrush Specific.
Hoof Ointment.
Skin Specific for Dogs.

Of all the leading Druggists' Sundries Houses
HARVEY & COMPANY, Ltd., Dublin

Continuous and Steadily Advertised Goods FOR DESTROYING RATS AND MICE

DANYSZ VIRUS

Retail Price (Protected).	Net Wholesale Price
Virus for Rats and Mice, single tube, 2/-	15/- per doz.
3 tubes, 5/-	
Virus for Mice only - single tube, 1/6	9/- " "
3 tubes, 3/-	

Date-expired tubes returned to us postage paid will be exchanged free of charge.

Danysz Virus in Liquid Form

Retail Price	Wholesale Price
Quart Bottles 6/- each	4/6 each
Pint " 4/6 each	3/9 "

HALLER'S EXTRACT OF SQUILL and DANZO RAT KILLER

Discount off Retail Prices 25% Monthly Account, or 33 1/3% cash with order.

	Retail	Monthly a/c	Cash with Order
1/2 gall. tins	10/-	7/6	6/8
1 " "	18/-	13/6	12/-
5 " "	80/-	60/-	53/4

DANZO BEETLE POWDER

For destroying Blackbeetles, Cockroaches, Crickets, &c.
Retail Prices (Protected) Wholesale prices per doz
In tins 3d. " " " " In boxes of 2 doz. 2/1
" 6d. " " " " " 1 " 3/8
" 1/- " " " " " 1 " 7/3
" 2/6 " " " " " 1 " 18/-
Danzo Beetle Powder will not deteriorate by keeping.
CARRIAGE PAID ON ALL ORDERS.

To be obtained from
HALLER LABORATORIES, LTD.
325 Borough High Street, LONDON, S.E.1

Telegrams: "Virudana, Sedist, London."

Telephone: Hop 2717

ONE of the FAMILY for whose requirements you must provide



WITH the universal acceptance by dog owners of the timely need of medicines for their dogs—the result of the Bob Martin educative advertising policy—has come an all-the-year-round demand for Bob Martin preparations.

Here is another member in two out of every three families for whose needs you must be ready—or lose trade. The habit of buying dog medicines has become as regular as the purchase of medicines and other preparations for every other member of the family. Dog owners have been taught to realise that they must have Bob Martin preparations handy *every day in the year*, and are taking precautions to ensure their dog's well-being by regular purchases.

There is a source of continuous and growing profit for you in stocking and displaying Bob Martin Dog Medicines and other preparations. This year the demand is being fostered by a greater advertising campaign than

ever—placed on a scale never before approached by any Dog Medicine manufacture. Of increasing appeal, too are the new displays being issued for window or counter display; screens, posters, cartons and showcards bringing sales as never before.



The dog medicine trade in your district—with its growing profits—can be yours if you let the hundreds of dog owners who pass your pharmacy know that you stock Bob Martin preparations. Can you afford to lose this opportunity for bigger sales?



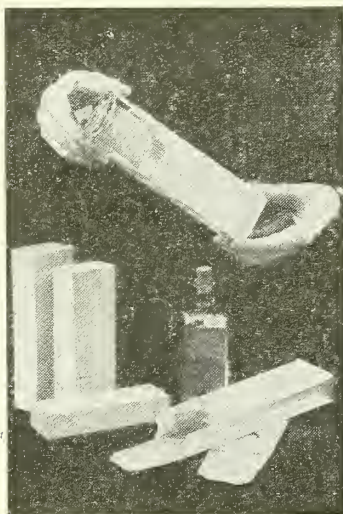
To ensure immediate receipt of the latest Bob Martin Sales Helps, write and ask for your name to be placed on the Bob Martin Display list, when all the new display material will be sent to you direct, immediately it is issued.

BOB MARTIN'S TASTELESS CONDITION POWDERS



BOB MARTIN Ltd. Dog Medicine Manufacturers since 1892, Southport, Eng.

WHICH PAYS BETTER—



wrapping medicine or dispensing ?

Every minute you spend wrapping medicine bottles with paper and sealing-wax is time and money wasted. That is why dispensers everywhere are now using this neat new Medicine Bottle Envelope. Sealed in a second, it enables you to attend to more customers, to make up more prescriptions. Your name and address can be printed on each bag at slight extra cost. Samples FREE on request.

Size	THICK WHITE MANILLA		MEDIUM WHITE MANILLA		Quantity Reductions
	per 1,000		per 1,000		per 1,000
2 oz. ...	14/-	...	11/-	...	2,000 3d.
4 oz. ...	15/3	...	12/4	...	3,000 6d.
6 oz. ...	17/11	...	14/-	...	4,000 9d.
8 oz. ...	19/3	...	15/8	...	Prices for 5,000 and
12 oz. ...	22/-	...	18/6	...	over on application.

CARRIAGE PAID

SAMPLES UPON APPLICATION

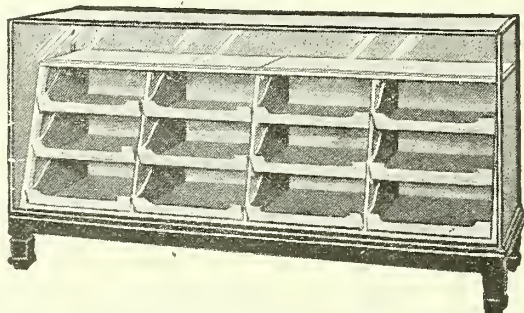
Order a trial supply now
from - - - - -

W. ALLEN CORNER

ENVELOPE SPECIALIST

47 MARKET STREET, MANCHESTER

RETURN for OUTLAY



THE QUICK SERVER

Ideal for business premises. Mahogany or Oak and Plate Glass. Three rows of light oak trays, opening from back as drawers. Above is a plate-glass shelf accessible by familiar sliding plate-glass doors.

Full illustrated list free on request.

On some goods you doubt that you are getting an adequate return for outlay, on some you are certain, on none can you rely so absolutely as on those things that enhance the attractiveness of your Pharmacy. A well-designed fitting is

An Investment

that brings a perpetual return. It attracts custom, gives status and lasts long after it has paid for the initial cost. We shall be pleased to discuss any shop-fitting problem.

WRITE
CALL
or
PHONE
Clerkenwell
2191

Philip Josephs & Sons Ltd.

90-92 St. John Street, Clerkenwell, E.C.1

PHARMACY FITTERS FOR OVER A CENTURY.

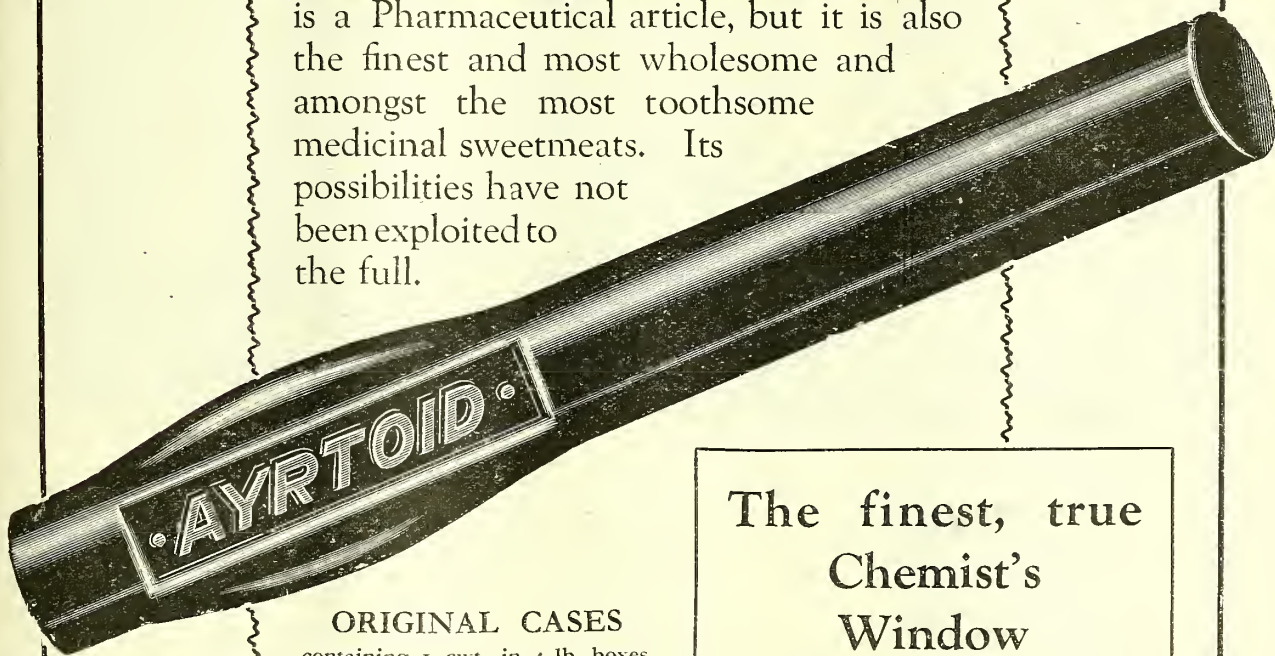
Late of
OLD ST.

Big deliveries just in time.

We are delighted to say that Ayrton's will maintain last season's prices, thanks to large part shipments landed last week. **BUY NOW!**

Pure Liquorice Juice

is a Pharmaceutical article, but it is also the finest and most wholesome and amongst the most toothsome medicinal sweetmeats. Its possibilities have not been exploited to the full.



ORIGINAL CASES

containing 1 cwt. in 4 lb. boxes.
One ounce or two ounce sticks.

per lb. $\frac{1}{3}$

SMALLER QUANTITIES

56 lbs. 28 lbs. 16 lbs. 8 lbs.

per lb. $1\frac{3}{4}$ $1\frac{1}{4}$ $1\frac{1}{2}$ $1\frac{1}{5}$

DISPLAY JAR FREE

with every first order for 56 lbs. or more. Height $14\frac{1}{2}$ ins., base $5\frac{1}{2}$ ins., beautifully lettered in "Shop-round" style in yellow and black. A distinctive yet characteristic addition to your counter or shelf.

The finest, true Chemist's Window

is an original case of **AYRTOID LIQUOR-ICE JUICE** complete with Bay Leaves which we use for packing.

Put it in at the first cold snap.

**AYRTON
SAUNDERS**

& CO., LTD. :: LIVERPOOL, ENG.

Mercolized Wax

for the Complexion

Extensively Advertised. Always in Demand.

*There is no risk in holding full stocks.
Every woman is a potential buyer.
Sales are regular and repeats certain.*

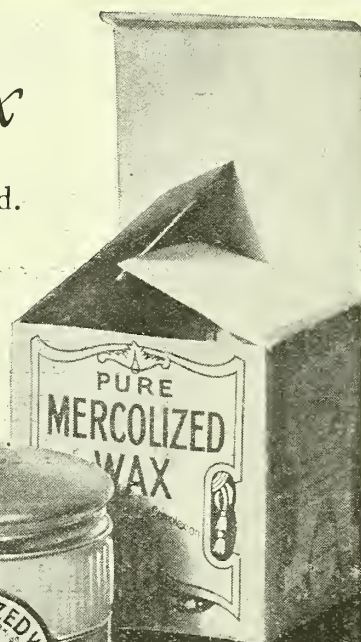
Stallax

*a Shampoo—also popular,
and shows a handsome profit.*

Dearborn

(1923) Limited

37 Gray's Inn Rd. London. W.C.1.



Telephone,
Holborn. 9669

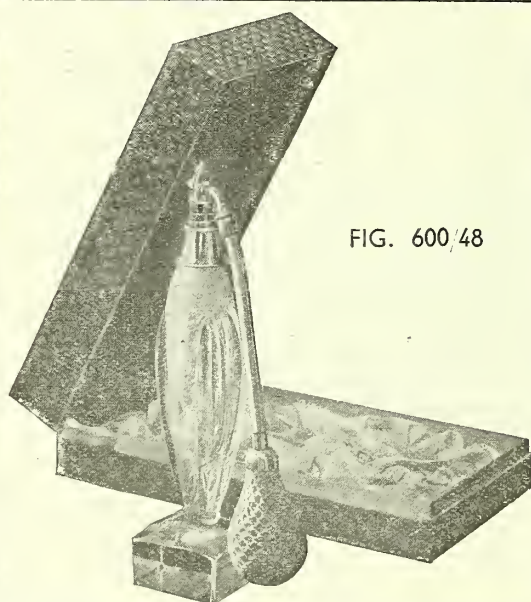


FIG. 600/48

WRITE FOR OUR XMAS CATALOGUE
OF NEW SEASON'S TOILET NOVELTIES.
ENORMOUS RANGES at RIDICULOUS PRICES

ARTHUR BERTON, LTD.

"BRITANNIA HOUSE,"

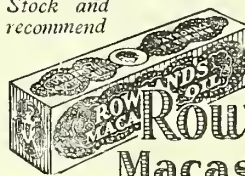
256/260 OLD STREET, LONDON, E.C.1

Phone: CLERKENWELL 1346-1347-1348-1349.
MANCHESTER: 36 Chapel Street. GLASGOW: 29/31 Duke Street.
Phone: CENTRAL 6299. Phone: BELL 702.

Selling Suggestions

Rowland's Macassar Oil nourishes
and revitalises the roots of greying,
thinning hair and soon restores it
to youthful colour and growth.

Stock and
recommend



Of all Wholesalers
to retail at 5/6,
7/- and 10/6.

**Rowland's
Macassar Oil**

J. H. & Co.

A. ROWLAND & SONS, Ltd., 22 Laystall St.,
Rosebery Avenue, London, E.C.1



Let the "GEM"
make money for you

Write for particulars and
name of local agent to the
manufacturers:—

**THE GEM
AUTOMATIC WEIGHING
MACHINE COMPANY
LIMITED**

46 NEW CITY ROAD
GLASGOW C.4

CRÈME TOKALON ROSE COLOUR SKIN FOOD



**A NON-COMPETITIVE LINE
BRINGING NEW MONEY**

NEW BUSINESS



**Extensively
Advertised in the
Popular Daily, Weekly
and Sunday Papers**

*Write for
Attractive Trade Terms.*

RETAILS AT
ROSE COLOUR .. 1/3
WHITE (non-greasy).. 1/-

TOKALON LTD. (Dept. C.D.)
Chase Rd., LONDON, N.W.10

A. S. LLOYD'S EUX-E-SIS.

**For Shaving
without
Soap, Water,
or Brush.**

CAUTION.

**The Labels on GENUINE EUXESIS bear
two signatures—A. S. Lloyd, in black
ink, and that of his Widow, Aimée
Lloyd, in RED. Refuse any other.**

Tubes 1/6 & 3/- ~ 33 $\frac{1}{3}$ % Profit

Sole Manufacturers
and Proprietors :

AIMÉE LLOYD & Co., Ltd.
23 PANTON STREET, HAYMARKET, LONDON, S.W.

N.B.—When ordering from Wholesale Houses write LLOYD'S EUXESIS (WIDOW'S).

THE WORLD'S FINEST RAZOR BLADE

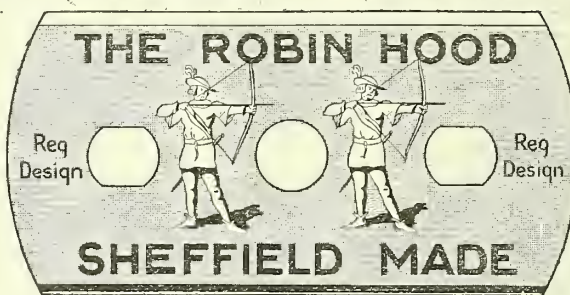
"THE BEST OF THE LOT"

The Edge of every
Blade Guaranteed

It Sells Itself.

High Class Display
Cards

In Demand
Everywhere



"The Blade with 100 Shaves"

Retails at

1 $\frac{1}{2}$ d. each

or 4 for 6d.

Exceptional Profits

Made by

**BROOKS, HAYWOOD
& CO., LTD.,**
Shiloh Works, Sheffield
England.

G. B. KENT & SONS, LTD.

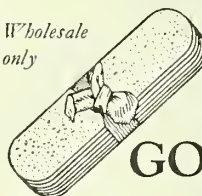
Are known the World over as
the Largest Manufacturers of

BEST BRITISH BRUSHES

Please write for full Particulars to :

75 FARRINGDON ROAD, E.C.1.

Wholesale
only



BRITISH MANICURE GOODS

that meet
Foreign Competition

We specialise in ORANGE STICKS and EMERY
BOARDS. BEST QUALITY. HAND FINISHED.

ROBERT LEE, 14 Calverley Grove
N.19

Phone : Archway 2144.



Patent No.
296,597.

Every Razor
and Blade
Guaranteed.

Sole Makers :

Thomas Ward & Sons, Ltd.,
Wardonia Works,
Sheffield - - England

THE

WARDONIA

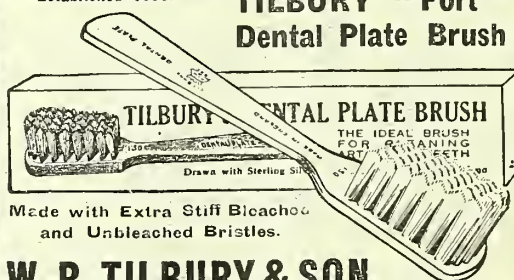
"NEW EDGE" RAZOR!

A shaving miracle with
enormous sales! Send
now for trade terms for
the Wardonia "New
Edge" Razor and Blades.
Both scientifically right
and soundly-established
lines at a generous
profit.



Established 1880.

TILBURY "Fort" Dental Plate Brush

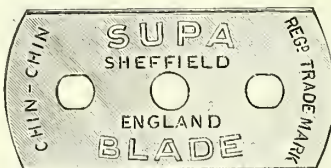
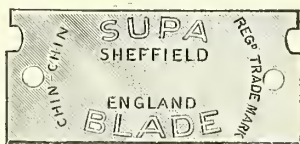


Made with Extra Stiff Bleached
and Unbleached Bristles.

W. R. TILBURY & SON

47 FRAMPTON PARK ROAD, HACKNEY,
LONDON - - - ENGLAND

The New SUPA Safety Razor Blades



DEFY COMPETITION

Send for Samples
and Prices

THE WAFER RAZOR CO., LTD., 260 Earsham St., Sheffield
Makers of the World-famous Chin-Chin Blades

NEW!

Queen Anne
LAVENDER WATER

Here's something special that you mustn't miss! A quality Lavender Water, attractively presented, that sells at new economy prices. To ensure its rapid success, 'Queen Anne' is being extensively advertised in the national press and a very generous Opening Bonus offer is being made.



NATIONALLY ADVERTISED..

OPENING BONUS OFFER

73% PROFIT

FOR ONE WEEK WINDOW SHOW

P.A.T.A.	Sells for	Per doz.	Cost
	s. d.	s. d.	s. d.
$\frac{1}{4}$ -doz. 5/- size	15 0	40 0	10 0
$\frac{1}{2}$ -doz. 3/- "	18 0	24 0	12 0
1-doz. 1/9 "	21 0	14 0	14 0
2-doz. 1/- "	24 0	8 0	16 0
	78 0		52 0
BONUS			
2 doz. 6d.			
Trial Size	12 0	4 6	FREE
Realisation	90 0	Investment	52 0

Profit on cost 38/- . . . 73%

Cash discount $2\frac{1}{2}\%$ — 10 days; net one month.

Attractive display material free. Carriage Paid.

Queen Anne

LAVENDER WATER

Send now for your Bonus Parcel A—the offer is open for a short period only—through your usual wholesaler or direct from the manufacturers, Marlborough & Co., 491-493, Liverpool Rd., London, N.7



ATTRACTIVE PRINTING

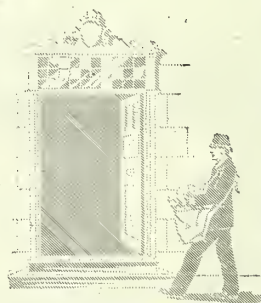
Whether for advertising or packing is essential to the wholesale, manufacturing and retail chemist alike, as an article is so frequently judged by its "get-up" and advertisements.

At

any

rate

it



ALWAYS

*makes the first impression
and it is all-important
that that impression
be a good one,
therefore use
printing
which*



"GETS THERE"!

*Send us your next enquiry and
ask for Samples*

ALF. HARRISON

& SONS, LTD.

Chemists' & Advertising Printers

BURLEY ROAD

LEEDS

London Office:

Sentinel House, Southampton Row, W.C.1
Telephone: Museum 8340. Also at Dublin and Belfast

More popular than ever DRUMMER DYES



now in
POWDER

and

**DOUBLE
STRENGTH**

*no increase
in price--4^p*

EDGES, BOLTON, LANCs.

17

**A POSTCARD
ENLARGEMENT FREE**

**WITH EACH FILM DEVELOPED
AND SIX PRINTS—**

POSTCARDS 2/6 doz. 4 for 1/-
from any negative or any photograph
copied (negative extra). Colour work a
speciality.

Less 33 1/3% Wholesale Discount
HIGHEST CLASS WORK ONLY
Sole Agency for each Town or District.
Fix up now in Front of your Competitor

THE

"Ow." Photographic Service
SPOUT YARD, LOUTH, LINC.

Competition does
Not make him blink

Tel. No. 226



**ACTS LIKE A CHARM
FOR RED, ROUGH,
CHAPPED HANDS**

**THE ORIGINAL
AND BEST**

"Veldt Cream"

1 oz.

FIVEPENCE

3 oz. 1/-, 6 oz. 1/9

12 oz. 2/9

**WRITE FOR BONUS
TERMS TO THE**

VELDT LABORATORY

Springfield, Upper Clapton, LONDON, E.5

HIRE YOUR OWN "DELIVERY SERVICE"

All the advantages of your own "Delivery Service" for one inclusive annual charge — really smart vans with bodies built to your order — capable uniformed drivers.

No transport worries — vans garaged and washed daily — replacement in case of breakdown without extra cost — load insured in transit.



BEAN'S EXPRESS LTD.

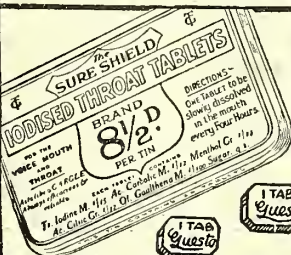
SAVE CAPITAL OUTLAY — LOWER RUNNING COSTS

Meet the BIG DEMAND

BY LAYING IN STOCKS OF



"SURE SHIELD"
BRAND
Iodised THROAT TABLETS



8 1/2 P. Tins

5/6 doz 63/- per gross

1 1/3 Tins

9/6 doz 108/- per Gross Nett



A Few Specimen "SURE SHIELD" Advertisements



THOS GUEST & CO., LTD.
CARRUTHERS STREET,
ANCOATS, MANCHESTER.

LONDON DEPOT:
1, SWAN STREET,
MINORIES, E.C.1.
TELEPHONE: ROYAL 8111.

A WELCOMING WARMTH

for your customers

A CONGENIAL, uniform warmth throughout the shop is economically provided by Wright's Gas Radiators. For trouble-free, dependable service no other method approaches the excellence of these easily installed units. No supervision is required, for the radiator cannot overheat. "Regulo"-control automatically reduces gas consumption immediately a predetermined temperature is reached. Considerable saving in gas is thus effected.

Each radiator is an independent unit so that heat distribution may be general or localized at will.

Four types are available—the "St. David," "St. Martin" and "St. Vincent" (all "Regulo"-controlled), and the "St. Bernard" (fitted with a governor).



**WRIGHT'S
GAS
RADIATORS**

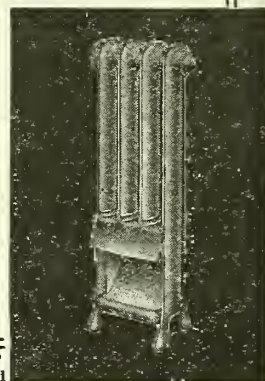
JOHN WRIGHT & COMPANY

Essex Works, Aston, Birmingham

(Radiation Ltd., Proprietors)

See them at the
Gas Showrooms

"REGULO"-CONTROLLED



The "St. Martin"
"Regulo"-Controlled

The "St. Bernard"
Governor Controlled

Paraffinum Liquidum

B.P.
ALL GRADES
SAMPLES & PRICES

On application to —

STERNS LTD

16 Finsbury Square London EC2

WHOLESALE ONLY

HORNBY'S TINS

For all chemists' purposes

WRITE NOW for samples and prices.

HORNBY & CO. (HULL) LTD.

36 HIGH STREET, HULL

TREBLES

SHOP FITTERS

SHOP FRONT
BUILDERS

PHARMACY FITTERS for over a Century.

549a Lea Bridge Road, Leyton, London, E.10

DOGS WILL NOT COME NEAR IT

Simply sprinkle a little
Vemmel and you are
sure of a clean frontage and freedom from dogs.
Non-poisonous, yet most efficient. Every Chemist
needs Vemmel to keep away dogs, also to keep away rats,
mice, beetles etc., from cellars and store rooms.

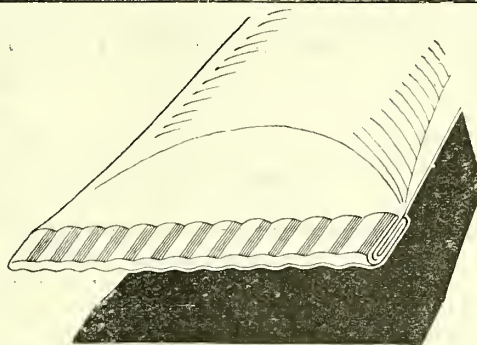
VEMMEL

Retalls at 1/6 per tin. Stocked by all whole-
salers. Booklets for distribution free on request
THE VEMMEL CHEMICAL COMPANY
80 COLEMAN STREET, LONDON, E.C.2

THERE IS NO SUBSTITUTE FOR VEMMEL



The COLTON CLIPLESS CLOSURE



*A new method of sealing collapsible tubes,
eliminating the clip and giving greater security for
the contents with a more decorative appearance*

POWER & HAND MACHINES AVAILABLE

Also

COLTON MACHINES

For Pills, Tablets, Capsules. Suppositories,
Hypodermic and Tablet Triturates.
Jar and can fillers for fluids and
pastés. Tube fillers, closers, fasteners.

*Write for illustrated
pamphlet giving full details*

Sole Agents

GRIFFIN AND TATLOCK LTD.

Kemble Street, Kingsway
London, W.C.2

DISTILLED WATER

AT
 $\frac{1}{3}$ d. PER GALLON

By using Brown's Patent Automatic Water Stills pure
distilled water may be obtained at the above cost,
using steam at any pressure between 30 and 100 lbs.
per square inch. The product is pure distilled
water, not condensed water from steam service pipes.

*Full particulars free on application. Enquiries are not followed
by personal call.*

MADE ALSO FOR GAS HEATING

BROWN & SON, LTD

Alembic Works, Wedmore St., London, N.19

NURSE HARVEY'S MIXTURE

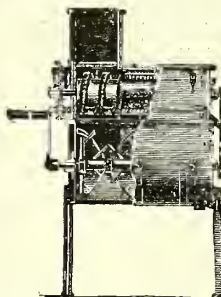
A safe, simple and reliable remedy for Children's
Ailments is advertised so extensively in the
daily and weekly Press as to bring mothers to
the retailer without effort on his part.

The selling has been done before the mother
reaches the chemist, and, having supplied her, it
is only common sense to claim she will buy other
family necessities from him. Moreover, the con-
tinuous demand for it produces a quick turnover.

For Direct Terms apply to—

OSCAR SCRUTON & CO., YORK

perfect blending



Gardner's "Rapid" Sifter
and Mixer gives a perfect
blend. The special In-
ternal Agitator ensures
accurate sifting and mix-
ing of materials, irrespec-
tive of the diversity of
their proportions; if
necessary, $\frac{1}{2}$ oz. can be
perfectly blended with
hundredweights.

GARDNERS Patent "RAPID" SIFTER & MIXER

*Write us for list of
Ball Mills, Disintegra-
tors, Millstones and
Mills, Drum Sieves,
Drying Machinery, etc.*

Wm. GARDNER & Sons (Gloucester) Ltd.
Bristol Road - - - Gloucester

Tel.: Gloucester 2288 (2 lines).

**Grams: Gardner, Gloucester*

LONDON - 19 Gray's Inn Chmbrs., 20 High Holborn, W.C.1

Telephone: Chancery 7347

"VITAMIN TESTED YEAST"

Yeast specially prepared for medicinal purposes.

GUARANTEED ABSOLUTELY PURE.

MIDGLEY & PARKINSON, LTD.,
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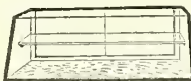
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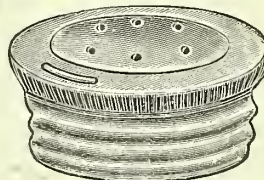
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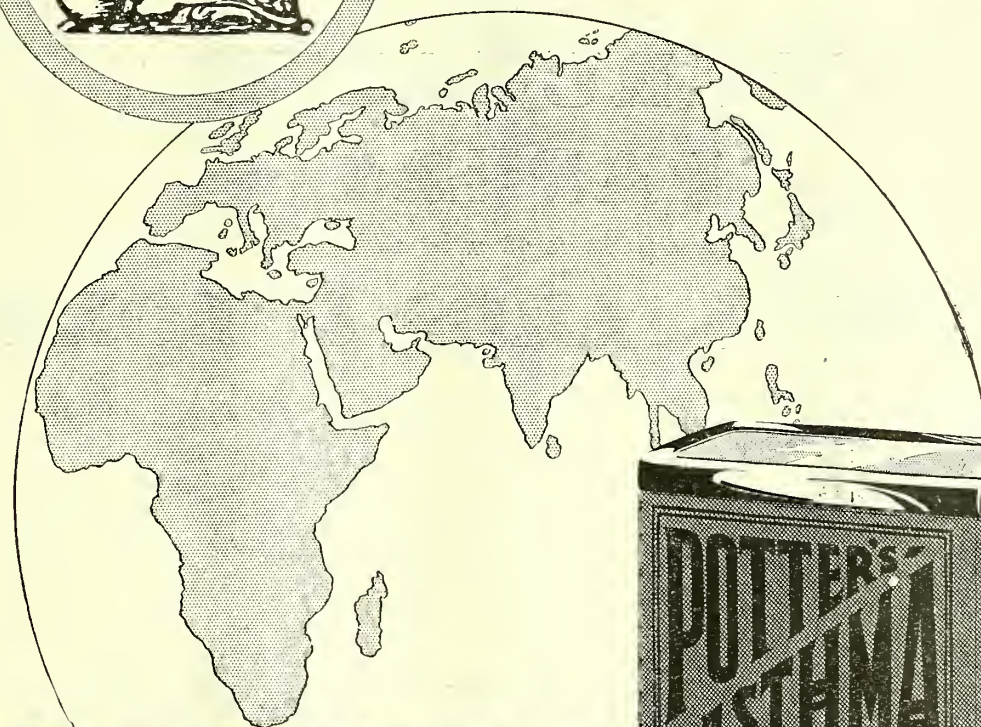
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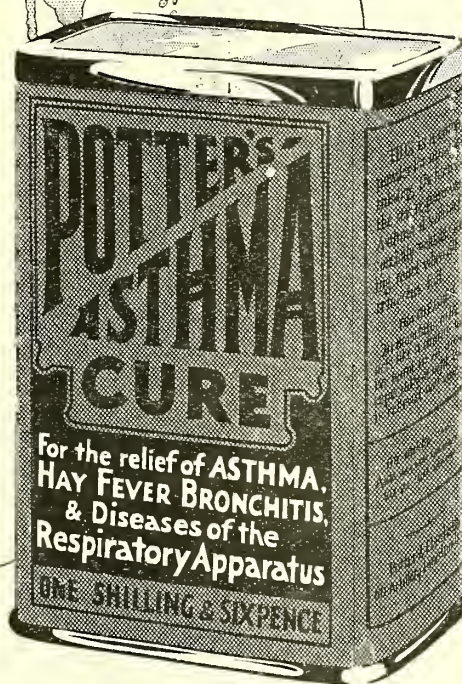
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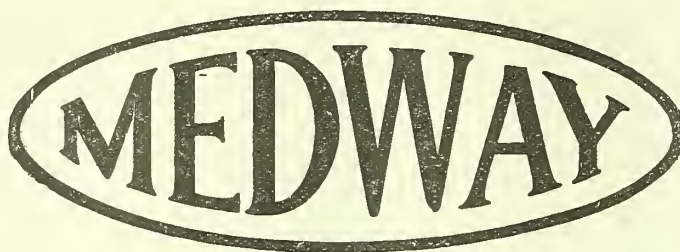
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News of the Week

Renewal of Treasury Exemption Orders

The Board of Trade give notice that the question of the renewal of the Safeguarding of Industries (Exemption) No. 2 Order, 1930, No. 3 Order, 1930, No. 1 Order, 1931, No. 2 Order, 1931, and No. 3 Order, 1931, made under Section 10 (5) of the Finance Act, 1926, is now under consideration. The articles covered by these Orders which exempt them from duty until December 31, 1931, are:—

Acid adipinic; acid isobutyl allyl barbituric; acid lactic which satisfies the requirements of the British Pharmacopœia; acid oxalic; acid propionic; amidopyrin (pyramidon); dimethyl-amidoantipyrine; ammonium perchlorate; barbitone (veronal); malonal; malourea; acid diethyl barbituric diethylmalonylurea; hypnogen, deba; bromural (domigene); butyl methyl adipate; calcium gluconate (calcium glyconate); celtium oxide; chinoline (quinoline); chinosol; cocaine, crude; dial (acid diallyl barbituric); dicyandiamide; didial (ethyl morphine diallyl barbiturate); diphenyl; diphenyl oxide; dysprosium oxide; elbon (cinamoyl para oxyphenyl urea); erbium oxide; ethylene bromide; eukodal; europium oxide; furfural; gadolinium oxide; germanium oxide; glycol ethers; guaiacol carbonate (duotal); holmium oxide; hydroquinone; integrators (planimeter type); R. lead acetate; lead tetraethyl; lipiodin; lutecium oxide; mercury vapour rectifiers having mercury cathodes; metaldehyde; methyl cyclohexanol methyl adipate; methyl sulphonal (dichylsulphonemethylcethylmethane, trional); methylene chloride; neodymium oxide; nickel hydroxide; oxymethyl paraoxyphenyl benzylamine methyl sulphate; papaverine; phenacetin (acetparaphenetidine); phenazone (antipyrine); phenyl dimethylpyrazolone; analgesin; anodynine; dimethyl oxychinizin); phenetidine, para-; phytin; piperazine (diethylene-diamine; dispermin); planimeters; R. potassium chlorate; potassium ethylxanthogenate (potassium xanthogenate); potassium guaiacol sulphonate (thiocol); R. potassium hydroxide (R. potassium caustic; R. potassium hydrate); R. potassium permanganate; prascodymium oxide; pyramidonveronal; quinine ethyl-carbonate; radium

compounds; resorcine (resorcinol); salol (phenyl salicylate); samarium oxide; scandium compounds; sodium ethyl methyl butyl barbiturate; strontium carbonate; strontium nitrate; styracol (guaiacol cinnamate); sulphonal; synthalin; terbium oxide; thallium oxide; urea (carbamide); vanadium-silica compounds specially prepared for use as catalysts for sulphuric acid manufacture; ytterbium oxide; yttrium oxide.

Communications on this matter should be addressed to the Principal Assistant Secretary, Industries and Manufactures Department, Board of Trade, Great George Street, London, S.W.1, within one month from the date of this notice. (September 16, 1931.)

Key Industries

Application has been made to the Board of Trade under Section 10 (5) of the Finance Act, 1926, for an Order exempting dimethyl sulphate from liability to duty under Part I of the Safeguarding of Industries Act, 1921. Communications regarding this application should be addressed to the Principal Assistant Secretary, Board of Trade (I. & M.), Great George Street, London, S.W.1, on or before October 23 next.

The British Chemical and Dyestuffs Traders' Association, Ltd.

The following circular has been issued to members:—

At a meeting of the Executive Council of this Association, held on September 22, attention was drawn to the fact that certain foreign suppliers had been seeking to obtain payment for goods in currencies other than sterling. This Council recommends to all members, both on national and on business grounds, that, as far as possible, such demands on the part of foreign suppliers should be resisted, and that all members should make every effort to conclude their bargains in sterling currency. Your Council has to-day very

R R *

carefully discussed the present situation, and whilst it is considered that no useful definite action can be taken at the moment, developments will be noted and members' interests carefully watched.

Grocers' Exhibition

The thirty-fifth International Exhibition and Market of the Grocery, Provisions, Oil and Italian Warehousemen and Allied Traders was opened at the Agricultural Hall, London, N.1, on September 19. The exhibition contains much of interest in machinery, products and utensils. The official display of the EMPIRE MARKETING BOARD takes the form of a commercial saleroom housing the exhibits of the Dominions and Colonies. Oxo, LTD., show Oxo preparations; FAIRY DYES, LTD., have a display of dyes and stocking dyes; a full range of weighers and scales is shown by W. & T. AVERY, LTD.; WILLIAM GARDNER & SONS (GLOUCESTER), LTD., specialise in machinery; cash registers are shown by THE NATIONAL CASH REGISTER CO., LTD., and tills by G. H. GLEDHILL & SONS, LTD.; ENERGEN FOODS CO., LTD., display Energen flour; ARMOUR & CO., LTD., show extract of beef and other products; VIROL, LTD., display Virol and milk; THE RALEIGH CYCLE CO., LTD., have a display of delivery vans; NATIONAL GLASS WORKS (YORK), LTD., show all types of bottles and jars; and JEVES' SANITARY COMPOUNDS CO., LTD., display disinfectants and soap.

Inquests

At Hereford, on September 18, a verdict of "Suicide while of unsound mind" was returned at an inquest on Paul Daly, a chauffeur, whose death was due to potassium cyanide poisoning.

At Wolverhampton, on September 17, a verdict of "Suicide" was returned at an inquest on Florence G. Davies, whose death was due to drinking disinfectant. The coroner expressed the opinion that such fluids sold without restrictions should be of a far weaker solution.

At Lambeth, London, on September 21, a verdict of "Suicide" was recorded at an inquest on the body of Edith A. Lunt, whose death was due to cyanide poisoning. A police sergeant said that the poison was purchased at a chemist's where Mrs. Lunt was known, and she signed the poisons book for it, saying that she required the poison to destroy a wasps' nest.

At Birmingham, on September 18, the City Coroner conducted an inquest respecting the death of Mary E. Tew. Evidence was given to the effect that deceased sent her daughter with a slip of paper to a chemist's to make a purchase. The chemist refused to supply what was asked for on the paper. The following day Mrs. Tew wrote a note, purporting to come from her husband, to a chemist asking to be supplied with some potassium cyanide for the purpose of killing rats. The husband believed his wife got the idea of poisoning by means of potassium cyanide through reading of the deaths of two persons in London by that means. It was stated that the chemist supplied the cyanide after making full inquiries and getting his poison-book signed. The coroner recorded a verdict of "Suicide while of unsound mind," and said Mrs. Tew took her life after much cunning and determination.

Birmingham

In a cricket match between the Pickwick Club and chemists at Stechford recently, the former gained a narrow victory.

Dr. R. H. Hopkins, lecturer in biochemistry at Heriot-Watt College, Edinburgh, has been appointed to succeed Professor A. R. Ling as Adrian Brown Professor of Biochemistry of Fermentation in the University of Birmingham.

The ninth annual reunion dinner of the Special Brigade (with which unit many pharmacists served during the war) will be held at the Imperial Hotel, Temple Street, Birmingham, on Saturday, October 17; full particulars from Mr. G. G. Heathcock, "Camelot," Chawn Hill, Stourbridge, Wores.

Liverpool

The reminiscences of Mr. John H. Robinson, which were published in the *C. & D.*, September 5, under the title of "Studies from Life," were reprinted in the "Westmorland Gazette," September 19.

Mr. A. E. Williamson, managing director of John Thompson (Wholesale Druggists, 1921), Ltd., Liverpool, who has resumed business after an absence of some weeks, says it is difficult to reply to all the letters he has received. Mr. Williamson asks us to thank his numerous friends for their kind expressions of sympathy and to say that his health is much improved.

Miscellaneous

IN THE COURTS.—At Salford Police Court, on September 18, Frank Barrington, grocer, Chapel Street, was fined £6 for selling a liquid preparation which was a poison in a bottle which did not bear the name and address of the seller, and was not labelled poison. Other summonses were in respect of there being no label bearing the name of the poison, and stating the proportion of poison contained. Radcliffe & Sons, Ltd., Stockport, who supplied the preparation, were fined a total of £13, and ordered to pay five guineas costs. According to the city analyst the bottle contained 15.5 per cent. of homologues of phenol. —At the South-Western Police Court, London, on September 19, Sidney A. Collins, described as a chemist's assistant, was sentenced to six months' imprisonment for stealing books from W. & G. Foyle, Ltd., Charing Cross Road.

Irish Notes

Brevities

Nominations in connection with the annual election for the Pharmaceutical Council of Northern Ireland closed on September 21. The retiring pharmaceutical representatives were Messrs. H. Todd, H. Lancashire (Ballymena), S. S. Badger (Magherafelt) and H. McRoberts, and the retiring druggist representative, Mr. J. F. Grimes (Pomeroy). In the latter section there was only one nomination, Mr. Grimes being returned unopposed. For the four pharmaceutical seats all the old members were nominated, except Mr. Lancashire, who did not come forward. In his place in the North Irish Pharmacists' Association, Mr. S. H. Forrest (Bangor) was nominated, while a fifth candidate put in an appearance in the person of Mr. G. W. T. McCann (Portrush). A contest therefore is necessary. Polling closes at noon on October 5.

At Belfast Police Court, on September 21, Walter R. Bell, 87 Great Victoria Street, grocer, was charged "that not being registered as a pharmaceutical chemist or druggist he unlawfully sold poison in contravention of the provisions of the Pharmacy and Poisons Act (Northern Ireland), 1925." Dr. J. V. S. Mills, who prosecuted for the Home Office, said that defendant kept a stock of patent medicines. On September 7 he sold a bottle of lysol to an inspector. David Moffatt, Home Office inspector, related that on September 7 he visited the defendant's premises in Great Victoria Street. Witness asked for a bottle of lysol, and was handed one by the defendant, who remarked that he was not allowed to sell this, as it was poison. Witness then asked defendant why he was selling it if he was not allowed to do so, and he answered that he had to take a risk. Witness then disclosed the fact that he was a Home Office inspector, when defendant made no reply. Defendant swore he did not think that the witness was stating the exact truth when he said that he (witness) said to him that he had to take a risk. He had only six bottles of lysol in stock, and the inspector got the last bottle. He had no more of it in stock now. Defendant remarked that the lysol had been bought a month previously, when he did not know that it was a poison. Defendant was ordered to pay a penalty of 50s., with the alternative of a month's imprisonment.

Westminster Wisdom

Notes on Parliamentary Matters

NATIONAL ECONOMY

In moving the financial resolution relating to National Health Insurance in the Economy Bill on September 18, the Minister of Health (Mr. Chamberlain) explained the proposals regarding the remuneration of Insurance doctors and chemists. He said that the remuneration of these two classes of persons is part of the benefits under the Act and those benefits are paid for partly by contributions and partly by the Exchequer. The result is that the effect of the proposal to deduct a certain proportion of the remuneration of doctors and chemists and to return that deduction to the Exchequer is that you give back to the Exchequer something which the Exchequer had already paid out for another purpose. That is only an example of the extraordinary complication which is found throughout the National Health Insurance scheme with its numerous subsidiary funds, and which is always a little difficult to follow, if one has not a great familiarity with the provisions of the various Acts. In the case of doctors and chemists it is proposed to reduce their remuneration by approximately one-ninth. I would like here to pay my tribute of admiration and gratitude to the doctors and the chemists for the spirit in which they received this cut. There was no question on their part. They said at

once that, treating this deduction not as a readjustment of their remuneration on its merits, but simply as a call made upon them to contribute to the national need, on that basis they would readily pay their share. That was a very fine example, and we are very grateful to them. The result of that action will be that in a full year there will be forthcoming £850,000 by way of deduction from the doctors' remuneration, and £120,000 by way of deduction from the chemists' remuneration and those sums will be appropriations-in-aid of the Exchequer payments in the cost of administration.

Coming Events

This section is reserved for advance notices of meetings or other events. These should be received by Wednesday of the week before the meetings, etc., occur.

Wednesday, September 30

South-West London Chemists' Association and Branch of the Pharmaceutical Society, Balham Constitutional Club, 211 Balham High Road, London, S.W.17, at 7.30 p.m. Dance, tickets 3s. 6d. each.

NATIONAL ASSOCIATION OF WOMEN PHARMACISTS.—A whist drive in aid of the Benevolent Fund of the Pharmaceutical Society (Orphan Fund) will be held at The Suffolk Galleries, Suffolk Street, Pall Mall, London, S.W.1, on Thursday, October 8. Single ticket 5s.; evening dress.

Topical Reflections

By Xrayser

Mr. Mallinson

and others directly concerned in concluding the arrangement with the Government (*C. & D.*, September 19, p. 361), in connection with the "Economy Budget cut," have every reason to be pleased that the announcement of their prompt decision should have had so favourable a reception, and I should imagine the memory of our contribution to the national need will count for much when the time arrives for reconsideration of the terms on which we undertake National Health Insurance dispensing. Mr. Mallinson and those associated with him appear to have done everything possible to prevent our sacrifice in this emergency being allowed to prejudice our position at a later date, and I should be surprised if the outcome of the statesman-like manner in which this delicate matter has been handled by our representatives were not to establish permanently our position as a State service at no far distant period. Doubtless there will be both doctors and chemists who take exception to this added burden, but I have heard of none as yet, and I fancy they will prove to constitute quite a small minority.

Profits and Percentages

have been so much intermixed for a long time past that it is quite refreshing to find one of your readers raising the question of the actual amount of profit he receives (*C. & D.*, September 19, p. 374). It is interesting, too, that he bases his case upon the changes consequent upon the de-stamping of proprietaries. Quite obviously, any reduction in the price of a standard size of a proprietary preparation involves the chemist who sells the article by retail in a loss of actual profit if his percentage profit remains the same as formerly. This is a point that is often overlooked. The amount of cash received as profit is of much greater importance than the percentage it represents, and it is idle of manufacturers to insist that they are maintaining the old rate of profit, as though the retailer's position remained unaffected. When de-stamping is effected and, whether the price to the public be reduced or not, the manufacturer has an extra

margin of profit available, part of this might not unreasonably be allotted to the chemists who, as retailers, have helped to build up the business in the article. Mr. Lee's suggestion that the chemist ought to continue to receive the same amount in cash as formerly may seem extravagant to manufacturers, but I am glad he has advanced the suggestion, if only because it may cause more of your readers to reflect upon the frequent inadequacy of percentage as compared with real profit.

Welfare Supplies

do not, as I think is well known to chemists, offer much in the way of profit on individual transactions. Small profits with quick returns may, however, tend to considerable advantage, and I am not surprised to find that some chemists cast an envious eye upon the business transacted at infant welfare centres. One whose letter appeared in your columns last week (p. 375) thinks it would be quite an easy matter for local health authorities to supply necessitous cases with vouchers for articles required, on the understanding that these should be taken to chemists who would supply the articles at the same rates as the clinics do at present. But this implies purchase of the goods by chemists at the same prices as those charged to clinics, and here we are at once confronted with a serious difficulty. As I understand the matter, there is never sufficient margin between the price charged to the clinics by the manufacturers and that at which the article is supplied to the consumer for any allowance to be made to a middleman or wholesaler. Naturally, therefore, no wholesaler cares to tackle this class of business, and the only way out is that the chemist must procure his supplies direct from the manufacturer. Accountancy costs usually necessitate a higher charge being made in such cases, in addition to which there is often reluctance to open a number of small accounts. A possible way out is for chemists always to send cash with order, and I fear there is no other alternative if chemists are to secure the business, whilst even then the manufacturers may not find themselves able to supply small parcels on the same terms as the larger quantities which are, as a rule, taken by the clinics.

Chemists' Exhibition

THE fourth Chemists' Exhibition held in Leeds since 1922 was opened on September 21 by Dr. A. Hawkyard, Lord Mayor of Leeds. A large number of the leading members of the trade in the Midlands and the North were present. The Lord Mayor referred to the very great advance made in the industry. He pointed out that this had been largely brought about by the work carried on in the laboratories of chemists and druggists. Some doctors said that there are only about six drugs that are of any use, but in his opinion that was sheer nonsense. It has been said that patients come to doctors when there is nothing wrong with them. He did not deny that that was possible, but he said they never came to him when they were ailing nothing. Mr. W. P. Want presided over the opening proceedings, and among those supporting him were Mr. W. H. Clubb (Liverpool), chairman of the Executive of the R.P.U.; Mr. L. Moreton Parry (Liverpool); Mr. N. N. Armitage (Leeds), vice-president of the P.A.T.A.; Mr. H. Gilleghan (Leeds), officers of the Leeds branches of the Pharmaceutical Society and the R.P.U. and of the West Riding Pharmaceutical Committee; Mr. Thos. Hardy, member of the Pharmaceutical Council, and others. Thanks to the Lord Mayor were moved by Mr. W. H. Clubb, Mr. N. N. Armitage, seconding, said medicine and pharmacy served the public side by side, and it was a great honour to have a distinguished medical man open their chemists' exhibition. He believed the link between medicine and pharmacy in Leeds would be drawn just a little closer by that day's events. (Applause.) Mr. W. P. Want presided over a luncheon gathering held after the opening. Mr. Herbert Gilleghan, in proposing a toast to the Lord Mayor and Lady Mayoress, said he recalled that early in his period of office as Lord Mayor Dr. Hawkyard said two meals per day were the secret of his good health, but to-day he had frankly admitted that the consistent taking of suitable medicines had had a great deal to do with it. Following the Lord Mayor's response, Mr. John Lancaster (chairman of the Leeds branch of the Pharmaceutical Society) proposed "Success to the Exhibition." He said this occasion was much looked forward to by chemists in Yorkshire. They in Leeds were proud of the high position Leeds pharmacy occupied in the esteem of the craft generally. (Hear, hear.) A toast to "The Ladies" was proposed in felicitous terms by Mr. Geoffrey Hirst, director of Hirst, Brooke & Hirst, Ltd., Leeds, who paid tribute to the good work done by the Ladies' Committee in preparing a warm social welcome. The Lady Mayoress responded. In the following paragraphs we summarise our impressions of the stands:—

BISODOL, LTD., draw special attention to their Antacid Digestant. They also show a super Peroxide Toothpaste as a chemist's own dentifrice. For anyone requiring "Own name" cartons and tubes, this company is able to supply a large range of exclusive designs.

T. F. BRISTOW & Co., LTD., are to be congratulated on the beauty of their stand. Their motto "Make Beauty a Duty" should appeal to all. In addition to a comprehensive range of goods suitable for the Christmas trade, attractively-packed perfumes, bath salts, brilliantines and soaps, they have some regular sellers amongst medical lines, Sulpho Cream, Ik-thol-line, Hard-water and Pine bath soaps being amongst the best.

BROOK, PARKER & Co., LTD., have a large stand which indicates the many-sided activities of this progressive Yorkshire house. They say that they can supply the chemist and druggist with everything he needs, including crude drugs, fine chemicals, galenicals, tablets, pills, lozenges, packed goods, sundries, dressings, photographic and electrical supplies. Their show of the chemical and galenical products for the trade was most attractive; the display of crude vegetable drugs was educative. In the photographic and electrical department the

"Home Cinema," which was shown in operation, was a most interesting feature.

COUNTY PERFUMERY Co. draw special attention to their hair cream, which is marketed under the name of "Brylcreem." As the name indicates, it is both a hair fixative and a dressing, but it contains no gum, therefore it cannot flake, nor does it cake the hair. It is on the P.A.T.A., and is packed in four popular selling sizes. Another line shown by this firm was Hill's Smoker's Toothpaste, a toothpaste for removing nicotine stains without scratching the enamel. They also had a liquid shaving cream called Quickshave, which makes a remarkable lather and does not dry on the face.

ARTHUR H. COX & Co., LTD., are showing a fine selection of their business-bringing lines of packed goods, while the moving electric sign, which is supplied free to their customers, together with attractive show material, are both good stimulants to sales. Amongst the many lines displayed were Chestnuts, the ever-popular winter cough lozenge, celery pills, Zom brand pile cure, Marienbad anti-obesity tablets, Nazalgene inhalant, Nazalgene cream, as well as a Lanoline cream, the last-named being a delicately perfumed emulsion which is a skin food and a good basis for powder.

FASSETT & JOHNSON, LTD., show a comprehensive display of proprietary lines and specialities. Their Ready Aid Dressing is a useful thing to show on the counter. In addition they had a full range of dressings and plasters of all kinds. Proprietary lines included California Syrup of Figs, Phyllosan, Sloan's Liniment, Angier's Emulsion, Bemax and Reudel Bath Saltrates and many other well-known lines.

GENATOSAN, LTD., are showing lines that have made them famous: Sanatogen, Genasprin and Formamint. In addition they have such growing lines as Genozo toothpaste and mouth wash tablets, Cystopurin and Nasmint.

GLAXO LABORATORIES have a display of Ostermilk. Not only is it somewhere near the price of liquid milk, but it contains added vitamin D and is the kind of preparation that will help the progressive chemist to regain his baby food trade. Many new pharmaceutical preparations produced were on show, including Ostelin, Ostomalt, Ostelin Emulsion and Glucose D, the last being a high quality of medicinal glucose in powder form.

GOODALL, BACKHOUSE & Co. have a most imposing exhibit, their principal lines showing the pharmaceutical side of their business, including malt and oil in various packs. They have one special part of the display devoted to "Goodall's Northern Agencies," such as Goodrich hot-water bottles, Pysect and Iglodine. A prominent show was given to fertiliser and lawn seed. They also have attractive lines for the Christmas trade. The latest feature which this Leeds house has introduced is a display of a film "Goodall's at Work," which shows many of their departments engaged in their ordinary every-day work.

HIRST, BROOKE & HIRST, LTD., not only have a remarkable show of everything pharmaceutical, but their packed lines are one of the outstanding features of the Exhibition. They have a range of articles in a distinctive pack, the Spear Brand. For goods that are "different" for Christmas trade this stand had much to offer.

THE LAVODENT Co., LTD., are showing their rechargeable Dentiliser toothbrush steriliser, and other articles for the dental trade, including a local anæsthetic. One of their new lines is a mosquito antidote which has a definite bacteriological value.

MACLEANS, LTD., show a large range of packed pharmaceuticals, including many chemists' "own name" lines. The principal features, however, were their regular selling lines of Macleans' peroxide toothpaste, vanishing cream, bath salts and other popular sellers.

MCCLURE, YOUNG & Co., LTD., are specialists in packed goods bearing the chemist's name and address. They had sample packs with all kinds of labels in all kinds of colours. They make a practice of using cellophane for all their products, thus ensuring that neat and clean appearance which is so necessary in everyday pharmacy. Their special line was a Radio-Active Mud, which is valuable for rheumatism.

CHARLES MIDGLEY, LTD., have a large selection of soaps of all kinds. Their general range and medicated soaps are well known to the chemists. They have, however, taken time by the forelock, and are now making soap fruits and flowers which at first deceive the unwary. Other novelties, such as soap kittens, a violin case and hand satchel, bridge sets, book case and desk fitted with toilet soap books were all to be seen. Many Christmas novelties were to be found on this stand.

W. & T. OWBRIDGE, LTD., show their ever-popular lines, lung tonic, pills and embrocation. They have a new range of advertising matter which should help sales considerably.

PARFUMERIE DE FLEURY have a magnificent show of a new range of perfumery and toilet articles. It is important to realise that the appearance of an article plays a great part in salesmanship to-day. Toilet preparations and perfumery, though they are considered luxuries, have become necessities for the woman of taste and refinement. The men who buy these articles desire something more than quality. Here is both quality and taste suitable as a gift to the most meticulous. There is nothing stereotyped about any of their lines, and they should bring a new *clientèle* to the chemist who shows them. Amongst the most charming are to be found Rythm, Episode, In the Dawn, Salutation, Winged Wishes, Lady Gay. There are preparations for men's use as well as for women, and their Christmas coffrets showed a remarkable range.

PARKE, DAVIS & Co. will ever be associated with Euthymol Toothpaste, which, with its new show material, should continue to be a big business getter. Other preparations on this stand were their shaving

cream, bronchial lozenges, hydrogen peroxide and cod-liver oil.

POTTER & MOORE, LTD., have a stand devoted exclusively to choice perfumes and toilet preparations, the latest addition being Potter & Moore's Mitchem Lavender Powder Cream. It is packed in dainty little mirror-fitted jars for the handbag. Their Christmas lines are well up to the standard of this well-known house.

PRITCHARD & CONSTANCE (MANUFACTURING), LTD., have a new line in the form of Amami Liquid Pine Tar Tonic Shampoo in the well-known Amami colours. These particular shampoos are specially recommended for those who have permanent waves.

W. J. RENDELL, LTD., whose speciality is known all over the world, draw attention to their window display scheme. Chemists interested in this should communicate with the company.

ROBERTS, COLE & Co., LTD., are showing the new live yeast capsule Barmule, which they confidently anticipate will prove to be a best seller.

A. DE ST. DALMAS & Co., LTD., are specialists in the manufacture of plasters, and have an excellent show of them. For packed goods and sundries this house is rapidly coming to the front. Their surgical dressings form a most effective display, and give many window dressing hints to the observant pharmacist.

SCRUBB & Co., LTD., have a bright show of their well-known lines. The new preparation they were exhibiting at this particular time was Scrubb's Perfumed Ammonia, either rose or pine. This is a line the chemist can advantageously show on his counter.

THOMAS WAIDE & SONS, LTD., are another progressive Leeds business. Their new ideas in labels, window bills and aids to advertising of all kinds were remarkable in their quality and extent.

ZENOBIA, LTD., again make their central display Zenobia Lily of the Valley perfume, which is undoubtedly a most popular floral perfume, and they have now added a series of toiletries and cosmetics. Other perfumes were shown as well, particularly the new Scotch Heather, which strikes an individual and pleasing note.

The Exhibition closes on September 25.

New Companies and Company News

P.C. means Private Company and R.O. Registered Office.

KEATINGS (CHEMISTS), LTD. (P.C.).—Capital £500. Objects: To carry on the business of chemists, druggists, drysalts, oil and colour men, etc. R.O.: 151 Wellington Road North, Heaton Norris, Ches.

CUBE WASHER Co., LTD. (P.C.).—Capital £1,500. Objects: To carry on the business of chemical manufacturers, soap boilers and manufacturers of all kinds, perfumers, dyers and cleaners, manufacturers' agents and representatives, etc.

HYDRO-ELECTRICAL TREATMENTS, LTD. (P.C.).—Capital £2,000. Objects: To acquire the business of a medical and general electrician carried on by C. T. Ashcroft at Cromford House, Cromford Court, Market Street, Manchester, as "Chris. Ashcroft."

WESTERN OXIDE & PAINT Co., LTD. (P.C.).—Capital £4,000. Objects: To carry on business as paint manufacturers and dealers, smelters of zinc spelter, manufacturers of zinc oxide, grinders of minerals and other materials for paints, manufacturers of and dealers in white lead and varnishes, etc., to acquire the paint factory with the machinery and fixtures therein and the buildings adjoining at Beech Avenue, Plymouth, occupied by the Western Pigment Co., Ltd., and to acquire or take on lease certain premises known as South View, Callington, Cornwall, comprising a factory, furnaces and ten acres of land, and all machinery and plant therein. Solicitors: Adams & Croft, 13 Princess Square, Plymouth.

ANTI-SEPTIKOL, LTD. (P.C.).—Nominal capital of £5,000. Objects: To acquire the registered trade mark "Antiseptikol," dated February 9, 1923, and being No. 434,144, together with trade marks Nos. 382,163, 434,145, 445,836 and 473,759 dated August 21, 1918, July 10, 1923, June 10, 1924, and January 12, 1927, respectively, and the goodwill in connection with all such trade marks; to adopt an agreement with Boots Cash Chemists (Southern), Ltd.; and to carry on the business of wholesale, retail, manufacturing and dispensing chemists and druggists, drug merchants and general storekeepers, etc. The directors are: Dr. P. C. Brett, 9 Quex Road, West Hampstead, N.W.6; W. Lee, 11 West Park Road, Kew Gardens, Richmond, Surrey; and H. R. Gillespie, Markfield, 18 Carisbrooke Drive, Nottingham. The directors may delegate all or any of their powers, other than the powers to make calls, to a committee or committees consisting of such person or persons, whether a member or members of their own body or a director or directors of one of the following companies: Boots Cash Chemists (Eastern), Ltd., Boots Cash Chemists (Western), Ltd., Boots Cash Chemists (Lancashire), Ltd., Boots Cash Chemists (Southern), Ltd., Boots Cash Chemists (Northern), Ltd., or Boots Pure Drug Co., Ltd. Secretary: A. Sugden. Solicitors: Seaton Taylor & Co., 5 Gray's Inn Square, W.C.1. R.O.: 62 South Audley Street, W.

VIROL, LTD.—Interim dividend for half-year on seven per cent. preference shares will be paid on October 1.

PHOSFERINE (ASHTON & PARSONS), LTD.—Accounts to June 30 show net loss of £2,257 carried forward. Debit balance of profit and loss at June 30, 1930, of £14,377 has been carried to development account.

Pharmaceutical Society of Ireland

Council Candidates

SEVEN seats on the Council of the Pharmaceutical Society of Ireland become vacant in October. Only six of the retiring members are seeking re-election, as Mr. John Smith, who has been on the Council for a large number of years, has decided not to come forward again.

We have invited each of the candidates to favour us with their views on pharmaceutical politics, and have received the following communication on behalf of the six members, who offer themselves for re-election, Messrs. Philip Brady, William Gannon, Joseph Gorry, Patrick D. Larkin, John J. Roche and Dr. Michael Ryan:—

We, the undersigned members of the Council of the Pharmaceutical Society of Ireland, retiring by rotation, offer ourselves for re-election. We invite the fullest criticism of our work on the Council during our three years' term of office, both with regard to conducting the work of the Society and safeguarding the interests of pharmacists throughout the country. During our period of office, affairs of vital interest to all members of the Society called for continuous attention, and we have always endeavoured to live up to our responsibilities as your representatives.

The Veterinary Bill, now an Act of An Dail, when first introduced, contained clauses which threatened to wipe out the best portion of the country pharmacists' business by making it illegal to sell or recommend veterinary medicines. During the period it was under discussion members of the Council were in constant attendance at the Dail and were able to command influential support and were successful in getting the objectionable clauses amended so that the chemist doing veterinary business will not be affected.

The Pharmacy Bill, which is now almost ready for introduction to the Dail as a government measure, has been the biggest task during our term of office. Every clause has been subjected to the closest scrutiny, and every endeavour has been made to raise the standard of pharmacy and to gain full control of the sale of all poisons. Deputations were received from members of the Society and from assistants, and their views were carefully considered, and, where practical, will be utilised to strengthen the Bill. It is the intention of the present Council, as soon as the Government Draft is complete and printed, to call a convention of all pharmacists and chemists and druggists in the Free State to consider the Bill and to organise opposition to any objectionable portions. In the meantime we appeal to pharmacists to disregard attempts by anonymous correspondents in the trade Press to disrupt the unity of the Society and their loyalty to the Council. As soon as the Bill is introduced to the Dail the constant attendance and close co-operation of every member of the Council during the debates will be essential. We are absolutely opposed to reciprocity with Great Britain or Northern Ireland.

During our term of office the School of Pharmacy has been opened and has proved a great success and a big boon to students. In order to encourage apprentices to study a scholarship has been instituted, open to all during the apprenticeship period. The prizes are value £10 10s. and £5 5s., available in remission of Final Examination fees. At present an up-to-date herbarium is being formed, and will be open to students for the next session.

One of our retiring councillors, Mr. Gannon, was unable to attend the Council meetings for some time owing to ill-health. He has now completely recovered. His advice on all matters of pharmacy was keenly appreciated by his colleagues on the Council.

We feel proud of being members of the Council during the past three years of fruitful work and definite

accomplishment in the common cause of increasing the prestige of our calling and making secure the livelihood of our members, and we confidently appeal to you to continue your trust and confidence.

THE NEW CANDIDATES

Seven new candidates, Messrs. F. J. Barragry, M.P.S.I., Dublin; C. J. Cremen, M.P.S.I., Dublin; John Gleeson, M.P.S.I., Sandymount; W. J. McKnight, M.P.S.I., Ballymahon; J. O'Rourke, M.P.S.I., Dun Laoghaire; M. J. Parkes, M.P.S.I., Blackrock; and Eugene Ronaghan, M.P.S.I., Dublin, who have formed a "no reciprocity and amendment of company law group of seven," have sent the following statement in response to our invitation:—

As candidates for seats on the Council of the Pharmaceutical Society of Ireland, we wish to give some account of the reasons that have forced us to contest this election.

Some time ago, owing to the alarming rumours in circulation concerning the Draft Pharmacy Bill, a representative body of chemists met in Dublin to discuss the matter. Various suggestions were made as to how we could ascertain the truth or otherwise of these rumours. A committee was formed and a petition was sent to the Council asking them to publish the text of the Draft Pharmacy Bill. The request was refused. Shortly afterwards a deputation waited on the Council and expressed views on vital matters contained in the Bill. Notwithstanding the fact that previous notice of the matters raised had been given the Council remained silent. The president, in a vague reply, said that, owing to the important nature of the questions and suggestions of the deputation, time would be required for their consideration. At this period it was not the intention of the committee to put forward candidates for seats on the Council, but rather to assist by suggestion and criticism the work of the Council as at present constituted. The Council have not published the Bill, neither have they replied to the questions or suggestions of the deputation. Every effort to secure publication of the Bill has proved futile. In the belief that chemists in the country have a right to know what proposals are contained in the Bill the Committee called a special meeting of city and country chemists to nominate candidates for seats on the Council.

We have been selected to contest this election in the interests of every individual chemist in Saorstát Éireann. Our programme is: That the Draft Pharmacy Bill must be published and that the members of the Society shall in general meeting discuss the proposals and insist on the redrafting of the objectionable clauses.

It is absurd to suggest that the Council, without consulting the wishes of the members, should send the Bill to the Dail as embracing the wishes of the members, when in point of fact, the vast body of members have never seen a complete copy of the Bill. One clause in particular must be deleted from the Bill, and that is the clause providing for the establishment of corporations or company pharmacies. The proposals as at present drafted are altogether in favour of companies, and would be disastrous to every individual owner. We claim that the operation and extension of company pharmacies must be checked, as combines are dangerous from every point of view—both national and professional. On the question of reciprocity, we are definitely opposed to it. We believe our entire future would be imperilled if twenty-one members of the Council have power to authorise chemists from other countries to practise pharmacy in our State. No other country has any room for our licentiates, and our near neighbours in particular have vast numbers of unemployed chemists.

We must safeguard the interests of chemists in Saorstát Éireann at all costs, and never agree to giving the Council power to grant reciprocity. As regards the sale of poisons—particularly agricultural and horticultural poisons—we deem it imperative that county or provincial associations should be formed with a view to sending deputations to the Minister to put forward our strong claims for confining the sale of poisons to those on the Register of our Society.

We appeal for a solid vote for our seven members, as we must have strong representation on the Council to carry out the above outlined policy.

Another new candidate is Mr. Thomas P. Toher, M.P.S.I., Sligo, and some details of his career are given below.

Mr. P. A. Brady

has been practising the art of pharmacy for the past twenty years, commencing with his apprenticeship to



MR. P. A. BRADY

Mr. E. P. Magee, Kells, and gaining further experience in Listowel, Greystones and Dublin. He qualified in 1917, and in the same year took over the management of his present business in Upper Camden Street on behalf of Mrs. Ryan, widow of the late Mr. G. M. Ryan, who had been established there a great number of years. For three years Mr. Brady studied medicine, but when he took over the business in 1922 this occupied

the whole of his attention. Mr. Brady is keenly interested in everything connected with pharmacy, and was elected to the Society's Council in 1928. He was secretary of the Reception Committee during the visit of the British Pharmaceutical Conference in 1929, and was also secretary of the Dinner Committee in 1930, the outstanding success of the function being largely due to his work.

Mr. William P. J. Gannon

has served on the Council since 1925. He is the proprietor of a pharmacy in Maryborough, which he purchased in 1916. It is an interesting fact that it was in the same shop that Mr. Gannon served his apprenticeship. Before commencing business on his own account, Mr. Gannon was an assistant manager of Hamilton, Long & Co., Ltd., Dublin.

Mr. Joseph Gorry

served on the Council since November 1925. He is also a member of the Law Committee and the House and General Purposes Committee. During the visit of the British Pharmaceutical Conference to Dublin in 1929 Mr. Gorry was chairman of the Sports Committee. He carries on a successful business at Naas, with a branch at Baltinglass.

Mr. Patrick D. Larkin

was co-opted a member of the Pharmaceutical Society's Council in 1927, and was re-elected in 1928. He is also a member of the Law Committee, House and General Purposes Committee, School Committee and Certificate Committee. Mr. Larkin is the proprietor of Byrnes' Medical Hall, Drogheda.

Mr. M. J. Parkes

is in business at Blackrock, co. Dublin. If elected he should be a valuable member of the Council, as he has had a considerable experience in public affairs. He was at one time a member of the local urban district council, where his work was recognised by the appointment to the chairmanship of the finance committee. He is also a peace commissioner.

Mr. John J. Roche

is the managing director of John J. Roche & Co., Ltd., Dublin. He is a native of Enniscorthy, co. Wexford, and was educated and apprenticed in Waterford. After qualifying, in 1917, he became manager of McElhinney's Pharmacy, Donnybrook, and later of the retail department of Fine Chemicals, Ltd., Dublin. He started in business on his own account at 38 Main Street, Donnybrook, in 1921, and shortly afterwards opened a branch at 7 Upper Ormond Quay, under the management of his brother, Mr. W. H. Roche, L.P.S.I. Two years later Mr. Roche purchased the business of Hayes & Hayes, Upper Rathmines, and carried it on under management of another brother, Mr. A. F. Roche, L.P.S.I. He opened at 50 Lower O'Connell Street (almost on the site of one of Dublin's oldest pharmacies, Butler's Medical Hall) in 1924. Mr. J. J. Roche was co-opted a member of the Council of the Pharmaceutical Society in 1927 and re-elected 1928. He is also a member of the Law Committee, House and General Purposes Committee, School Committee, Certificates Committee, and was elected treasurer of the Benevolent Fund in succession to the late Mr. Doyle. Mr. Roche was secretary to the Sports Committee during the visit of the British Pharmaceutical Conference in 1929; he is treasurer of the Irish Chemists' Golfing Society.



MR. JOHN J. ROCHE

Dr. M. L. Ryan,

took over his business from Mr. G. Robinson, Lower Camden Street, Dublin, in 1912. He was apprenticed to Dr. W. P. Connolly, Michelstown, co. Cork, and qualified in 1911. He was appointed dispenser at the Peter Street Dispensary, Dublin, about eleven years ago, and obtained his medical diploma in 1923. It is interesting to note that Dr. Ryan was one of the first to be appointed a peace commissioner in the Irish Free State; he was treasurer of the Irish Chemists' Golfing Society during the year 1927-28; elected a member of the Council of the Pharmaceutical Society of Ireland in 1922, and was treasurer from 1926 to 1930. In that year he was elected vice-president of the Society.



DR. M. L. RYAN

Mr. Thomas P. Toher

who is one of the new candidates, is the proprietor of The Sligo Drug Co., Sligo. He was educated at Blackrock College, and served his apprenticeship to Hayes, Conyngham & Robinson, Ltd., Dublin, afterwards being manager of Wells & Co., Upper O'Connell Street, and J. J. Graham & Co., Westmoreland Street. He is a member of the Chamber of Commerce, Sligo, chairman of the Civic Committee, and captain of the County Sligo Golf Club, 1930.

THE eighth annual issue of "The South American Handbook" has been published by Trade and Travel Publications, Ltd., 14 Leadenhall Street, London, E.C.3. The present volume has been thoroughly revised and partly rewritten.

The Progress of Pharmacy and Allied Sciences

PHARMACY

Tincture of Iodine.—The following formula for tincture of iodine has been proposed for inclusion in the new edition of the Austrian Pharmacopœia, now in course of preparation:—

Iodine	7 gm.
Sodium iodide	3 gm.
Alcohol (90 per cent.)	90 gm.

Trituration of Camphor.—O. Krarup Moeller ("Farmaceutisk Tidende," July 4, 1931) gives the following formula for trituration of camphor, 10 per cent., in use in the communal hospital of Copenhagen:—

Camphor	10 gm.
Alcohol (96 per cent.)	10 gm.
Mucilage of acacia (1+2)	30 gm.
Mucilage of agar-agar (0.2 per cent.)	50 gm.

Add the solution of camphor in the alcohol in small portions to the mucilage of acacia in a mortar and stir until a homogeneous suspension is obtained, then add the cold mucilage of agar-agar. The latter is prepared by boiling for five minutes and filtering through cotton wool.

Throat Tablets D A K.—The following formula for *Tabletæ Gutturis* has been added to the formulary of the Association of Danish Pharmacists ("Archiv for Pharmaci og Chemi," No. 15, 1931):—

Benzoic acid	5 gm.
Sugar	488 3 gm.
Oil of theobroma	20 gm.
Gum acacia, in powder	20 gm.
Distilled water	20 gm.
Oil of anise	0.7 gm.
Menthol	2 gm.
Eucalyptol	4 gm.
Ether	25 gm.
Talc	60 gm.

Mix the benzoic acid with the sugar, and gradually add the emulsion prepared with the gum acacia, melted oil of theobroma and distilled water. The resulting mass is granulated and the granules dried at ordinary temperature. The dried granules are then uniformly moistened with the solution of anise oil, menthol and eucalyptol in the ether, and the ether allowed to evaporate. Add one part of talc to nine parts of granules and make into tablets, each weighing 0.6 gm.

Iodine Ointment.—C. H. LaWall and L. F. Tice ("Journal of the American Pharmaceutical Association," August, 1931) have devised a formula for an antiseptic iodine ointment based on the use of Dioxan, recently developed at the Mellon Institute. This is chemically diethylene dioxide, a solvent which is completely miscible with soft paraffin and also with water. The formula for making the ointment is as follows:—

7 per cent. solution of iodine in Dioxan	14 c.c.
Hard paraffin	10 gm.
Soft paraffin	76 gm.

The 7-per-cent. solution of iodine in Dioxan is prepared by adding to 100 c.c. of Dioxan in a flask 7.6 gm. of powdered iodine, stoppering the flask and effecting solution by means of gentle heat, using a water bath. Then ointment is prepared by fusing the hard and soft paraffin together in a casserole, cooling

until the congealing point is almost reached and adding the Dioxan-iodine solution at once and stirring until thoroughly incorporated. Several different metals were studied concerning their adaptability for tubing for the satisfactory dispensing of the ointment, but each of the metals was found to be attacked by iodine in time. There remains but one way of dispensing the ointment which is in jars of the paraffin-lined lid type.

Tests for Glass Containers.—By a decree of the Reichsrat the tests for glass ampoules and other bottles in which medicines are dispensed, included in the sixth edition of the German Pharmacopœia, have been replaced by the following new tests which become effective on October 1, 1931:—

GLASS AMPOULES FOR SOLUTIONS OF ALKALOIDAL SALTS.—5 grams of the sieved powdered glass is introduced into a flask of Jena glass in which previously distilled water has been boiled. By means of repeated decantation with distilled water or with alcohol the last remnants of glass dust are removed from the powder. The powdered glass thus obtained is then mixed with 100 c.c. of distilled water, 0.44 c.c. of *N*/100 hydrochloric acid, and 1 or 2 drops of solution of methyl red, and heated for 30 minutes on a boiling water bath. At the end of this period the red colour of the liquid should not have completely disappeared.

MEDICINE BOTTLES.—The medicine bottle to be tested is first thoroughly cleansed with distilled water and then filled with an aqueous solution of narcotine hydrochloride (1+199); in the case of bottles with a capacity not exceeding 100 c.c. as far as the base of the neck, and in the case of larger bottles the bottle is approximately half filled with the above solution. The solution of narcotine hydrochloride is to be freshly prepared without the aid of heat and, if necessary, filtered after standing for twenty-four hours, using a flask of Jena glass in which distilled water has previously been boiled. At the end of one hour at the most a scarcely perceptible crystalline precipitate should be apparent in the bottle, which should not exhibit any cloudy or flocculent precipitate of free narcotine base.

Belgian Formulas.—The following preparations figure in the fourth edition of the Belgian Pharmacopœia, which becomes official from November 1, 1931:—

COMPOUND SYRUP OF KOLA (SIROP DE HELL).—

Iron citrate	8.0 gm.
Quinine sulphate	2.0 gm.
Strychnine nitrate	0.3 gm.
Citric acid	20.0 gm.
Lactic acid	20.0 gm.
Glycerin	60.0 gm.
Sodium glycerophosphate	100.0 gm.
Fluid extract of kola	100.0 gm.
Syrup of orange peel	689.7 gm.

Dissolve the strychnine nitrate in the lactic acid, add the citric acid, iron citrate, quinine sulphate and sodium glycerophosphate. Mix and then add the glycerin and finally the syrup of orange peel, previously mixed with the fluid extract of kola, and slightly warmed.

DECOCTION OF CINCHONA.—

Fluid extract of cinchona	100 gm.
Distilled water	900 gm.

Filter.

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INFUSION OF CALUMBA.—

Fluid extract of calumba	50 gm.
Distilled water	950 gm.

Filter.

INFUSION OF DIGITALIS.—

Digitalis leaves, in powder ..	Amount prescribed
Distilled water heated to 70° C.	Amount prescribed

Maintain at a temperature of 70° C. for 30 minutes; set aside to cool and filter.

INFUSION OF SENEGA.—

Fluid extract of senega	30 gm.
Distilled water	970 gm.

Filter.

IODISED FLUID EXTRACT OF CINCHONA.—

Potassium iodide	3.0 gm.
Fluid extract of cinchona	25.0 gm.
Fluid extract of orange peel	5.0 gm.
Fluid extract of walnut leaves ..	50.0 gm.
Alcohol (94 per cent.)	16.7 gm.
Anethol	0.3 gm.

LIP CERATE.—

White wax	500 gm.
Liquid paraffin	245 gm.
Hard paraffin	245 gm.
Carmines	4 gm.
Oil of geranium	1 gm.
Oil of bergamot	5 gm.

PHENOSALYL.—

Phenol	180.0 gm.
Salicylic acid	20.0 gm.
Lactic acid	40.0 gm.
Glycerin	200.0 gm.
Borax	5.0 gm.
Menthol	1.0 gm.
Eucalyptol	0.6 gm.
Oil of lemon	0.6 gm.
Distilled water	552.8 gm.

SOLLEYSEL'S ESCHAROTIC MELLITE.—

Copper subacetate, in powder ..	160 gm.
Zinc sulphate, in powder	160 gm.
Lead oxide, in powder	80 gm.
Arsenious acid, in fine powder ..	6 gm.
Honey	660 gm.

Mix the first three substances with the honey and heat, with agitation, until the mixture assumes a red colour, then incorporate the arsenious acid.

SOLUTION OF ALOES.—

Aloes, in coarse powder	500 gm.
Sodium carbonate	10 gm.
Distilled water	440 gm.

Heat on a water bath until solution is effected and strain while warm. Allow the liquid to cool and add 50 gm. of solution of ammonia (17 per cent.) If necessary complete with water to 1,000 gm.

STABILISED TINCTURE OF VALERIAN.—

1,000 gm. of alcohol (80 per cent.), to which 5 gm. of calcium carbonate has been added, is brought to boiling point in a tared flask of 5,000 c.c. capacity on a water bath, whereupon 1,000 gm. of entire fresh valerian root is added gradually, taking care not to interrupt the course of ebullition. A reflux condenser is now fitted on to the flask and boiling is continued for 30 minutes. Set aside to cool, remove the alcohol by decantation and reduce the valerian root to a coarse powder, which is then returned into the flask together with the alcohol and the calcium carbonate. Boil again under the reflux condenser for 30 minutes, and then set aside to cool. Make up to the original total weight (i.e., 2,005 gm.) by the addition of alcohol (80 per cent.), press and filter.

STABILISED TINCTURE OF HORSE-CHESTNUT is prepared similarly from fresh horse-chestnuts (*Aesculus Hippocastanum*, L.) and alcohol (75 per cent.).

SYRUP OF CALCIUM BROMIDE.—

Calcium bromide	25 gm.
Distilled water	25 gm.
Syrup of orange-flower	950 gm.

SYRUP OF CALCIUM LACTOPHOSPHATE.—

Calcium carbonate	9 gm.
Lactic acid	22 gm.
Dilute phosphoric acid (10 per cent.)	88 gm.

Dissolve the calcium carbonate in the lactic acid previously diluted with 108 gm. of distilled water with the aid of heat. When cold, filter and add the dilute phosphoric acid and sufficient water to produce 370 gm. Dissolve 623 gm. of sugar in the liquid without the aid of heat and then add 7 gm. of spirit of lemon.

SYRUP OF CINCHONA WITH POTASSIUM IODIDE AND COD-LIVER OIL (SIROP DE VANIER AVEC HUILE DE FOIE DE MORUE).—

Cod-liver oil	100 gm.
Anethol	5 gm.
Tragacanth, in powder	2 gm.
Gum acacia, in powder	8 gm.
Purified honey	400 gm.
Syrup	385 gm.
Iodised fluid extract of cinchona ..	100 gm.

Mix the cod-liver oil and anethol with the gums and then incorporate gradually the other liquids to produce an emulsion.

PHARMACEUTICAL CHEMISTRY

ψ-Ergotinine.—S. Smith and G. M. Timmis ("Journal of the Chemical Society," August, 1931) propose the name ψ-ergotinine for the alkaloid of higher rotation but similar melting point to ergotinine. The two alkaloids differ apparently in composition by the elements of one molecule of water, ψ-ergotinine being probably isomeric with ergotoxine. Boiling with methyl alcohol effects partial conversion of ψ-ergotinine into ergotinine. ψ-ergotinine, like ergotinine, is converted into ergotoxine by boiling with alcohol and phosphoric acid. The two alkaloids have similar absorption spectra, and are best distinguished by their specific rotations and solubility differences. ψ-ergotinine is considerably more soluble than ergotinine in the common organic solvents.

Bismuth Tartrate.—S. G. Stevenson ("Quarterly Journal of Pharmacy and Pharmacology," iv, 2, 178) has studied the tartrates of bismuth with the object of confirming the conclusion that bismuth behaves normally, forming basic, normal and acidic salts without any complex formation and, at the same time, to endeavour to find a method for preparing normal bismuth tartrate of constant composition, using the B.P. process for the preparation of liquor bismuthi et ammonii citratis as the basis. The correct ratio for normal bismuth tartrate is given by the author as 2:3. Results are given which indicate that the preparation of normal bismuth tartrate is possible by a modification of the B.P. method for liquor bismuthi et ammonii citratis; but that the composition of the wash liquid is extremely important. At the same time the results also confirm those of Morton, in that the behaviour is that which one would expect, if a complex bismuthyl-acid were not formed. The suggested formula for normal bismuth tartrate is as follows:—Bismuth oxynitrate, 70 gm.; tartaric acid, 55 gm. Powder the tartaric acid and mix in a mortar with the bismuth oxynitrate and 60 millilitres of water. Stand with occasional stirring for half an hour or until a small portion is soluble in ammonia. Wash by decantation with 0.375 per cent. tartaric acid solution using at least four washings of about 400 millilitres. Filter and dry the product.

Action of Soluble Iodides on Strychnine Sulphate.—The precipitation of strychnine and its salts by alkali iodides has been denied by some investigators and upheld by others. Furthermore, the precipitation has been said to be due to various causes, namely, alkalinity of the iodide, salting out of the strychnine salt, formation of

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the hydriodide and formation of a complex iodide. In order to determine some of the conditions under which strychnine sulphate is precipitated by alkali iodides as well as the nature of the precipitation and the character of the precipitate formed, G. W. Hargreaves ("Journal of the American Pharmaceutical Association," August 1931) undertook a series of experiments. A saturated solution of strychnine sulphate was treated with a 10-per-cent. solution of potassium iodide, a white crystalline precipitate formed at once. An analogous reaction took place with sodium iodide. It was thought that the precipitate formed might possibly be a double salt of strychnine sulphate and potassium iodide. The precipitate formed was washed thoroughly with distilled water, dried and tested qualitatively. A good test was obtained for strychnine and for iodine but the sulphate radical and potassium gave negative results. This indicated that the precipitate was strychnine hydriodide. It was recrystallised from diluted alcohol and the melting point taken. Above 275° it darkened and melted with decomposition above 280° . Because of the apparent decomposition that sets in at high temperatures it is impossible to obtain a definite melting point of the substance. The melting point varies according to the speed of heating of the bath, rapid heating giving a higher melting point with the same sample than slow heating. A saturated solution of strychnine sulphate was treated with diluted hydriodic acid and a white crystalline precipitate was formed at once. It has the same appearance as the substance obtained with potassium iodide and showed the same behaviour as to its melting point. Having determined the nature of the precipitation and the character of the precipitate, a study was made of the conditions under which it takes place. It was found that if the iodide were added to the strychnine salt in a smaller volume of water, a white crystalline precipitate was formed at once. This indicated that the controlling factor in this precipitation is the concentration of the strychnine salt. Unless freshly boiled distilled water was used in making up the solution of strychnine sulphate and potassium iodide, the solution became yellow on standing, due to the liberation of iodine, and the white crystalline precipitate was gradually changed over to one consisting of brownish-red needles. This reaction was greatly accelerated when the solution was slightly acidified. The precipitate was collected and recrystallised from alcohol in which it is only sparingly soluble. It melted at $252-254^{\circ}$ with decomposition. When the melting point bath was slowly heated decomposition set in at a lower temperature and the melting point was lowered. The appearance and melting point indicated that the substance was the periodide $C_{21}H_{23}O_2N_2I_2$, which was prepared by Buracewski and Kozniowski from a di-iodo derivative obtained by precipitating a hot alcoholic solution of strychnine with a concentrated solution of iodine in carbon disulphide. This was confirmed by analysis.

SUMMARY.—(1) Strychnine hydriodide is formed when strychnine sulphate solutions are treated with alkali iodides or hydriodic acid. (2) One gram of strychnine hydriodide is soluble in about 345 c.c. of water at 25° . This solubility is greatly decreased by the presence of excess soluble iodide. (3) Strychnine periodide is formed when a very dilute solution of iodine reacts on strychnine hydriodide. This substance has a low solubility in both water and alcohol and adds to the danger of prescribing strychnine in solution with iodides.

AGRICULTURAL CHEMISTRY

"Flash" Pasteurisation.—The "flash" method of pasteurisation is thus described by J. McIntosh and L. E. H. Whitby ("Lancet," 5629, 147):—"The milk was rapidly heated to $160^{\circ}-165^{\circ}$ F. in a space of about four minutes and then quickly cooled to $40^{\circ}-45^{\circ}$ F. by flowing over water- and brine-cooled pipes. The authors submit that the "flash" principle is better than the "holding" method approved by the Ministry of Health, and they consider that the "holding" method is liable to fail on occasions which are not easy to foresee.

Organic Acids in Cereal Plants.—Some organic acids in barley, maize, oats and rye plants have been studied by E. K. Nelson and H. H. Mottem ("The Journal of the American Chemical Society," 53, 8, 3046). The investigation was confined to the non-volatile acids extracted by boiling from the dried, ground plants. Barley plants were found to contain aconitic, malic, citric, malonic, tricarballic and oxalic acids. A determination of oxalic acid showed that it contained 0.019 per cent. on the basis of the fresh material. Maize plants were found to contain aconitic, malic, citric, tricarballic and oxalic acids. The percentage of oxalic acid in the fresh material was found to be 0.029. Oat plants were found to contain aconitic, malic, citric, malonic and oxalic acids. 0.04 per cent. of oxalic acid was found in the fresh plants. Aconitic, malic, citric and oxalic acids were found in rye plants. The undried plants contained 0.048 per cent. of oxalic acid. The occurrence of aconitic acid in these members of the grass family, as well as in sugar cane and sorghum, is noteworthy.

ANALYTICAL CHEMISTRY

Iodine and Chlorine in Iodised Oils.—T. Tusting Cocking and G. Middleton ("Quarterly Journal of Pharmacy and Pharmacology," iv, 2, 175) describe a new method for the determination of iodine and chlorine in iodised oils. The method is based on the fact that by boiling iodised oil with metallic zinc and glacial acetic acid, the halogens are quantitatively converted into water-soluble zinc salts. The determination is carried out as follows:—About 1 gm. of the oil (accurately weighed) is boiled for about one hour under a reflux condenser with 10 c.c. of glacial acetic acid and 1 gm. of zinc filings. Thirty c.c. of hot water is then added down the condenser tube, and the liquid is filtered through a plug of wet cotton wool, and the flask and filter are washed with two portions of 20 c.c. of water. (It is not necessary that the filtrate should be clear.) The combined filtrate and washings are cooled, 100 c.c. of concentrated hydrochloric acid is added, and the liquid titrated with N/20 potassium iodate. When the deep brown colour, which at first develops, changes to a light brown, a few c.c. of chloroform is added and the titration is continued, with vigorous shaking, until the chloroform is colourless (the aqueous liquid being clear yellow). Each c.c. of N/20 potassium iodate is equivalent to 0.01269 gm. of iodine. Proof that the iodine is recovered quantitatively from iodised oil was afforded by determining, under the above conditions, the iodine in 10 c.c. of double strength Wijs solution, and also in a mixture of 10 c.c. of the same solution with 1 gm. of sesame oil which had been allowed to stand for one hour for absorption to take place. It is an additional advantage of the method that the chlorine also may be determined.

PURE CHEMISTRY AND PHYSICS

Molecular Weight of Insulin.—B. Sjögren and T. Svedberg ("The Journal of the American Chemical Society," 52, 7, 2657) have studied the molecular weight of insulin. Insulin, state the authors, is stable from a pH of about 4.5 to about 7.0 with a molecular weight of 35,100. At lower and higher pH values the insulin molecule is broken up into smaller units. Near the borders of the stability region this dissociation is reversible. Within the stability region the sedimentation constant of insulin is 3.47×10^{-13} and the molar frictional constant 2.54×10^{-16} . The molecules are spherical with a radius of 2.18 $\mu\mu$. The molecular weight, sedimentation constant, molar frictional constant and molecular radius of insulin are within the limits of error identical with the corresponding constants for egg albumin and Bence-Jones protein. This circumstance, the authors conclude, makes it extremely probable that insulin is a well-defined protein and that the physiological activity of this hormone is a property of the insulin molecule itself or some special group within it.

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Solubilities of Alkali Bromides and Fluorides.—F. G. Germuth ("Journal of The Franklin Institute," September, 1931, 343) has studied the solubilities of alkali bromides and fluorides in anhydrous methanol, ethanol, and butanol. The author finds that sodium bromide, potassium bromide and potassium fluoride dissolve less freely in methanol as the temperature of the solvent is increased. The solubility of sodium fluoride is slightly increased under similar conditions. The proportion of sodium bromide dissolving in ethanol becomes greater until the peak is reached; solubility then diminishes. Continued increase in temperature retards the dissolution of potassium fluoride in ethyl alcohol, while a steady increase in the quantities of potassium bromide and sodium fluoride dissolving in this medium is observed. As the temperature of the *n*-butanol solutions is elevated, a slight acceleration in the solubilities of potassium bromide and sodium fluoride obtains, while that of sodium bromide attains a maximum point at 45° C., and then decreases. The potassium salt of hydrofluoric acid is insoluble at each degree of temperature noted. The solubility of each of the compounds considered decreases as the molecular weight of the alcohol employed as solvent increases.

BACTERIOLOGY

Germicidal Action of Soaps.—J. E. Walker reviews ("Journal of the American Medical Association," 97, 1, 19) the literature of the germicidal action of various soaps, and describes further experiments of his own. He finds that soaps are strongly bactericidal against pneumococci, streptococci, meningococci, gonococci, diphtheria bacilli, influenza bacilli and *Spirochaeta pallida*. Their activity against these organisms compares favourably with that of many of the recent synthesised chemicals. When properly used for cleaning the hands or for the washing of eating utensils, soaps are undoubtedly potent factors in preventing the spread of diseases due to these organisms. The action of soaps as germicides is, however, limited by the fact that they do not destroy staphylococci and typhoid bacilli. The author adds that Renaud has recently found 2-per-cent. solutions of sodium oleate beneficial as an irrigation and wet dressing for ulcerated surfaces.

DENTISTRY

Infra-Red Rays in Dental Surgery.—L. Biddle Duffield ("The Dental Cosmos," lxxiii, 7) gives particulars of the use of infra-red rays in dental surgery. The rays have been found to be exceedingly useful in many cases where ice-bags or compresses were formerly used. In neuralgias of peripheral origin, the rays are beneficial, while as an analgesic they seem to be the remedy *par excellence*. The heat produced by infra-red rays is a powerful stimulant, producing a rapidly increased flow of blood to the part acted upon. It stimulates functional activities, reduces congestion and inflammation, relieves pain, promotes glandular activity, calms mental activity, and induces rest and sleep. As regards the technique of application, a patient who is about to receive his first treatment should always be prepared by describing to him the sensation he should receive. In the beginning the lamp is placed directly over the area to be treated, about a foot away, and the current turned on. Too great heat will tend to an accumulation of radiant energy and increase the discomfort, whereas a gentle warmth is exceedingly pleasant and comforting. The first exposure lasts about twenty minutes. For children, the first treatment is fifteen minutes. Areas of ulceration should not be heated excessively, as it is not only possible to burn the wound, but to destroy the embryonic epithelium. On account of the rays exerting their influence in the deeper structure, surface hyperemia is only present to a slight degree and fades quickly after the treatment. The infra-red lamp is cheap, easily portable, and can be attached to any electric-light socket either alternating or direct current. In the author's experience it has been found that the infra-red lamp rays never burn the patient

or cause tissue coagulation, and can be entrusted to the patient himself to apply and regulate.

Medicinal Aids in Conservative Periodontal Treatment.—J. Lewis Blass ("The Dental Cosmos," lxxiii, 7, 671) gives a list of formulas which have been found useful in periodontal disease. An obtundent paste (balance of occlusion) is as follows:—

Potassium hydroxide	8
Glycerin	12
Tincture of green soap	12
Liquefied phenol	16

Mix and heat to boiling point.

Anhydrous sodium carbonate ..	16
Antipyrin	20

This is carried on to the tooth surface with the grinding stone and is allowed to remain on the tooth during grinding. A formula for obtundent liquid is as follows:—

Potassium hydroxide	2
Water	4
Tincture of green soap	8
Liquefied phenol	10

Heat to boiling point

Glycerin	10
Antipyrin	20

The Stillman method of tooth-brushing is best carried out by the aid of a salt and lime-water dentifrice. A useful formula is as follows:—

Phenolphthalein	0.2
Menthol	aa.
Saccharin	0.6
Oil of wintergreen	2.0
Calcium oxide	10.0
Sodium chloride	500.0

Gingival abrasion caused by improper brushing methods may be relieved by painting with a small amount of equal parts of tincture of benzoin and tincture of myrrh. A mouthwash which liberates oxygen in the mouth is given as follows:—

Sodium perborate	60
Sodium bicarbonate	30
Methyl salicylate	4

ESSENTIAL OILS

Oil of Peppermint Miticans.—Werner ("Journal of the American Pharmaceutical Association," 1931, 20, 445) has obtained 1.57 per cent. of essential oil from the dried plant, having the following characters:—Specific gravity, 0.925 at 20°; optical rotation, +16.49°; refractive index, 1.4807 at 26°; ester value, 12.64 (equivalent to 4.47 per cent. of geranyl acetate); and ester value after acetylation 61.29 (equivalent to 17.9 per cent. of geraniol). The oil contained 71.75 per cent. of ketones as determined by the neutral sulphite method. Menthone and pulegone are present, the latter predominating, and menthol (or *d*-neomenthol) and another ketone, possibly β -thujone, were also detected, together with acetic and formic acids, terpenes and sesquiterpenes.

Oil of Eucalyptus Dives has been studied by N. Stephan and M. Düker ("Journal für Praktische Chemie," 1931 [ii] 129, 145). Two samples, having respectively d_{20}^4 0.9124, 0.8936; n_D^{13} 1.4858, 1.4808; α -41.44°-56.8° were mixed, and the unsaponifiable matter was fractionated under reduced pressure. Oxygen containing fractions, b.p. 72-210/12-14 mm. were separated and yielded piperitone, terpinene-4-ol and an acid $C_{18}H_{34}O_2$ (m.p. 109-112°). The piperitone was obtained as its compound with sodium hydrogen sulphite, and could be easily oxidised to thymol with ferric chloride and an aqueous solution of acetic acid. Potassium permanganate gave diosphenol, but other oxidising agents yielded negative results.

The High Boiling Fractions of Japanese Peppermint Oils.—Y. Shinosaki and T. Nagasawa ("Journal of the Society of Chem. Ind. of Japan," 1930, 33, 420B) have found fractions to consist chiefly of esters

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and other compounds with a boiling point higher than 240° , having a characteristic odour. In addition to $\Delta\beta$ -hexenol (α -naphthylurethane, m.p. $70-71^{\circ}$, silver phthalic ester m.p. $125-126^{\circ}$), which yielded n -hexyl alcohol on hydrogenation, two sesquiterpene alcohols, $C_{15}H_{26}O$, were obtained, having:—b.p. 4 mm., d_{40}^{20} , n_D^{20} , $\frac{13}{D}$; $129-130^{\circ}$, 0.9716, 1.5070, -4.0° ; $134-136^{\circ}$, 0.9726, 1.5079, $+5.22^{\circ}$. Formic, acetic, *iso*-valeric, n -hexoic, pelargonic (?) and higher saturated (?) acids were obtained on fractionation of the methyl esters.

Essential Oil of *Bækea frutescens*.—Spoelestra ("Recueil des Travaux Chimiques des Pays-Bas," 1931, 50, 433) has examined the essential oil distilled by steam from the leaves of *B. frutescens*, which yield from 0.9 to 1.8 per cent. of the oil from which he has obtained the following constituents by fractional distillation:—Lacto-pinine (α - and β -), 58 per cent.; *l*-limonene and dipentene, 3.1 per cent.; *p*-cymene, 0.7 per cent.; cineol, 7.4 per cent.; alcohols, including linalol, fenchyl alcohol, borneol and terpineol, about 10 per cent.; a dicyclic sesquiterpene boiling at $126-135^{\circ}$ at 12 mm., 1.4 per cent. (this yields cadalene on dehydrogenation); a dicyclic sesquiterpene alcohol boiling at $152-157^{\circ}$ at 13 mm.; of specific rotation, -12° , 3 per cent. (this body also yields cadalene on dehydrogenation); and a phenolic ether melting at 104° .

Hinoki Oil.—Kafuku and Nozoe ("Bulletin of the Chemical Society of Japan," 1931, 6, 111) have isolated from the high boiling fractions of the essential oil of *Chamaecyparis obtusa* a new sesquiterpene to which they have given the name sesquichamene. It boils at $122.5^{\circ}-123.5^{\circ}$ at 12 mm.; has a refractive index 1.5021 at 28° , s.g. 0.9277 at 28° , and optical rotation -89.85° . It forms a nitroschloride melting at $77.5-78.5^{\circ}$, and a nitrol-benzylamine melting at $165-166^{\circ}$. On oxidation with potassium permanganate in acetone it yields a substance $C_{15}H_{26}O_2$, melting at $89-91^{\circ}$, which yields a semicarbazone melting at 233° , and a second body which melts at $240-245^{\circ}$. Treatment of sesquichamene with alcoholic sulphuric acid yields *iso*-sesquichamene, boiling at $129-131^{\circ}$ at 12 mm.; of refractive index 1.5109 at 21.5° , s.g. 0.932 at 21.5° , and optical rotation -8.52° . The oil also contains cadinene and cadinol.

Essential Oil of Taiwanian Cedar.—Kafuku and Kato ("Bulletin of the Chemical Society of Japan," 1931, 6, 65) have obtained 0.23 per cent. of essential oil from the wood of *Taiwania cryptomerioides*. The oil had the following characters:—Specific gravity at 15° , 0.9593; refractive index, 1.5104 at 15° ; optical rotation, -2° ; acid value, 0.38 ester value, 10.52; ester value after acetylation 83. The sesquiterpene caryophyllene and cadinene were identified and the authors also claim to have isolated humulene. This must of necessity throw some doubt upon their results as it has now been definitely established that Chapman's humulene is not an individual, but an isomeric caryophyllene. The authors have also isolated a sesquiterpene alcohol which they have named taiwanol. This boils at $141-143^{\circ}$ at 6 mm.; has a specific gravity 0.9692 at 30° ; a refractive index 1.5045 at 30° ; and an optical rotation, $-42-56^{\circ}$. It yields a urethane melting at $134-135^{\circ}$. There is no evidence to show that this alcohol is a new body, and it may be isomeric or identical with cadinol.

Bactericidal Efficiency of Essential Oils.—Ruth E. Miller ("American Journal of Pharmacy," 103, 6, 324) has tested several volatile oils, mixtures of two or more of these oils and a sample of beta-naphthol for their bactericidal efficiency; the phenol coefficient test was employed. It was found that with a mixture of alcohol 28 parts, glycerin 22 parts, prestone 31 parts, soap 6 parts, and water 13 parts, considerable amounts of the volatile oils could be dissolved without having a high enough proportion of alcohol to interfere with bactericidal results. Nineteen different solutions of oils

and active principles were made up and tested. Preliminary tests were made to determine the greatest dilution which would kill bacteria. Two test organisms were used, *B. typhosus* and *Staphylococcus albus*. As only three solutions killed the *Staphylococcus albus* in dilutions weaker than 1-5, no further tests were made with that organism. In the following solutions of oils the undiluted material killed in two minutes, while the 1-5 dilution showed growth in all the sub-culture tubes:—Eucalyptol 4 per cent.; methyl salicylate 2 per cent., satrol 1 per cent., anethol 1 per cent., menthol 4 per cent., synthetic menthol 1 per cent., Ceylon cinnamon 2 per cent., cinnamic aldehyde 1 per cent.; oil of cassia 2 per cent., sassafras oil 1 per cent., lavender oil 1 per cent., mixed oils 0.95 per cent. (eugenol 2 per cent.; eucalyptol 2 per cent.), (eugenol 2 per cent.; menthol 1 per cent.), (eucalyptol 2 per cent.; eugenol 2 per cent.; menthol 0.5 per cent.). There was a lapse of time between the preliminary tests and the final phenol coefficient tests with *B. typhosus*. In this time (one year) there was a decrease in efficiency of some of these solutions. The figures given below are the phenol coefficients for these solutions and their active principles. A—phenol coefficient of the solution; B—phenol coefficient of the oil or active principle:—

Solution	A	B
Thymol 2 per cent.	0.55	27.6
Eugenol 4 per cent. (first solution)	0.38	9.7
Eugenol 4 per cent. (second solution)	0.11	2.7
Beta-naphthol 2 per cent.	0.22	11.4
Menthol 4 per cent.	0.20	5.1
Oil of cassia 2 per cent. (Sample A)	0.11	5.7
Oil of cassia 2 per cent. (Sample B)	0.09	4.9
Cinnamic aldehyde 1 per cent.	0.06	6.1
Ceylon cinnamon 2 per cent.	0.06	—
Synthetic menthol 1 per cent.	0.06	—
Eucalyptol 4 per cent. (first year)	0.05	1.44
Eucalyptol 4 per cent. (second year)	0.02	—
Lavender 2 per cent.	0.05	—
Methyl salicylate 2 per cent.	0.03	1.76
Sassafras oil 1 per cent.	0.02	—
Satrol 1 per cent.	0.019	—
Anethol 1 per cent.	0.015	—

Mixtures	
Eugenol 2 per cent. }	0.28
Menthol 1 per cent. }	
Eucalyptol 2 per cent. }	0.20
Eugenol 2 per cent. }	
Menthol 0.5 per cent. }	
Eucalyptol 2 per cent. }	0.18
Eugenol 2 per cent. }	
Mixed oils 0.95 per cent.	0.07

The above figures indicate that when two or more of these oils or their active principles in a solvent of 31 parts each of alcohol, glycerin and water and 6.6 parts of soap are mixed, their bactericidal efficiency is enhanced. The resulting mixture has a greater bactericidal efficiency than is obtained when each active principle is used separately and in larger amounts.

MEDICINE

Scurvy following an Ulcer Diet.—H. E. Martin gives details ("Lancet," 5632, 293) of a severe attack of scurvy following a diet which had for eleven months been restricted to rice, milk, eggs, white meats and broth. The patient had been treated successively as having rheumatism, arthritis with pyorrhæa, and rheumatism with purpura. On admission to hospital he was prescribed a diet including four lemons, 8 oz. of green vegetables, and 8 oz. of potatoes daily. Recovery was rapid.

Polyneuritis from Thallium Acetate.—A case of polyneuritis following the use of a depilatory containing about 7 per cent. of thallium acetate is reported by C. L. Short ("Journal of the American Medical Association," 97, 2, 101). After six months' treatment there was only slight improvement in the neuritis, though the general symptoms had been largely overcome. The case illustrates a severe and possibly permanent toxic effect from the absorption of thallium acetate through the skin.

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Hypersensitiveness to Lanolin.—Marion B. Sulzberger and J. L. Morse report ("Journal of the American Medical Association," 96, 25, 2099) two cases of patients whose eczematous skin eruptions were rendered worse by using ointments containing lanolin as the basis. Both cases rapidly improved when, after suitable preliminary tests in order to ascertain the cause of the trouble, another basis was substituted for lanolin. Both patients were employed in occupations involving the handling of woollen goods.

Carotinæmia.—O. L. Lévin and S. H. Silvers give details ("Journal of the American Medical Association," 96, 26, 2190) of two cases of carotinæmia, caused by using a restricted diet comprising large quantities of carrots, with other vegetables. The most obvious clinical feature was the yellow coloration of the skin; this and the other symptoms subsided as the result of a changed dietary. An important feature of the complaint is the possibility of its being confused with icterus; a differential diagnosis, however, should not be difficult.

Intramuscular Use of Liver Extract.—M. B. Strauss and others point out ("Journal of the American Medical Association," 97, 5, 313) that the technical skill required for the intravenous administration of liver extract, and the reactions sometimes following its use, do not render the method ideal. A formula for the preparation of an extract for intramuscular use is given by the authors. Maximal reticulocyte responses were obtained from the daily intramuscular injection of the extract derived from 10 gm. of liver. The potential therapeutic and economic advantages of this method are suggested.

Dermatitis following the Use of Ephedrine.—S. Ayres and N. P. Anderson give details, with illustrations ("Journal of the American Medical Association," 97, 7, 437), of two cases of dermatitis medicamentosa following the use of ephedrine; in each case a nasal spray containing ephedrine had been prescribed, and in one case $\frac{3}{4}$ gr. of the sulphate had been taken three times daily. There was a local dermatitis at the point of application, and a more or less generalised eruption, erythematous and purpuric in case 1, erythematous and edematous in case 2. The authors were not able to demonstrate passive transfer.

Milk from Cows Given Irradiated Yeast or Ergosterol.—Numerous tests have been made by A. F. Hess and others ("Journal of the American Medical Association," 97, 6, 370) on the antirachitic potency of milk from cows receiving irradiated yeast or ergosterol. The cows were divided into five groups, one of which was the control, and the infants selected numbered 102. The four varieties of milk yielded were also tested on rats. The authors point out, in discussing the results obtained, that no known antirachitic agent is able absolutely to prevent rickets. Rickets was prevented, except in its minor manifestations. In cases in which rickets was already present, the milk brought about calcification within a month. From the point of view of the number of antirachitic rat units fed to the cow, the irradiated yeast induced a more potent milk than the ergosterol. This distinction was evident both by biological assay on rats and by clinical tests of a preventive and curative nature. The outstanding advantage of this method of antirachitic therapy is that the specific factor is incorporated in the diet of the infant.

The Common Cold.—Studies of experimental transmission of colds have been carried out with human subjects by A. R. Dochez and others ("Lancet," 5636, 547). Human volunteers were carefully isolated and inoculated intranasally with bacteria-free filtrates from individuals suffering from acute colds. After an incubation period of about twenty-four hours the inoculated subject has manifested the signs of the common cold, and has run a typical course of symptoms lasting from one to two weeks. Such experimental colds in human beings have been passed in series from individual to individual. These human experimental colds differ bac-

teriologically from the experimental cold in the chimpanzee in that there is no intermediate evidence of increased activity on the part of the potential pathogens harboured in the human nasopharynx. The same difference in bacterial activity is manifest between the spontaneous cold in the chimpanzee and the spontaneous cold in human beings. The authors are satisfied that the common cold is caused by a filtrable virus, which they have cultivated *in vitro* and in living tissue medium. The evidence presented by these experiments indicates that the virus of the common cold survives for a considerable length of time after removal from the human nasopharynx. The total duration of life of the culture virus from the time of removal from the human subject has been seventy-four days.

Treatment of Intestinal Parasites.—After treating 3,000 patients for intestinal parasites, A. H. Kemp gives ("Journal of the American Medical Association," 96, 23, 1948) the following reasons for omitting the customary fasting and purging prior to administering the vermifuge:—(1) A mixture of a vermifuge with food material in the intestine does not necessarily result either in rendering the drug inert or in the formation of a substance deleterious to the wellbeing of the patient. (2) With the bowel distended even slightly (i.e., not in a state of collapse) the drug has a greater opportunity of coming in actual contact with the head of the parasite than when the bowel is empty and collapsed, with the head possibly buried in some sulcus. (3) Mixed with food, the drug would probably be in contact with the parasite for a longer period than if no food were present. Some vermifuges are in themselves so irritating to the lining of the intestine that they cause an increased peristaltic action, rapidly forcing the drug past the worm. (4) With the bowel containing food, liquid though the food is as it passes through the upper part of the small intestine, the element of friction probably enters in, aiding the peristaltic action to dislodge the head of the worm. (5) Even though failure attends the first attempt with this method, the patient has not been weakened by fasting and excessive purging, and is usually more than willing to try a second time. The drug used is either carbon tetrachloride or santonin, followed by a cathartic an hour later.

Dermatitis from Dyed Fur.—G. H. Percival gives ("Lancet," 5634, 417) the results of a lengthy investigation into cases of dermatitis due to the wearing of dyed fur. The main issues of the problem are stated in the form of eight questions, and four proprietary substances (referred to in the paper as A, B, C and D) were used in the experiments. The contact eczema test of Jadassohn and Bloch was employed. Substance A contained paraphenylenediamine, but not metaphenylenediamine. The author's conclusions are as follows:—(1) The potential irritant properties of a dyed fur are due to some substance used in the dyeing process, and not to mechanical irritation by the fur. (2) Normal skins do not react to a dyed fur even under conditions in which the fur in question would produce dermatitis in a fur dermatitis patient. (3) The dermatitis is due to a hypersensitive skin reacting with some substance in the dyed fur in concentrations with which normal skins do not react, and, therefore, this reaction may be termed allergic. (4) The substance in the fur investigated with which the allergic skin reacts is "A," or an early oxidation product of this compound. (5) Fur dermatitis cases react to concentrations of "A," varying from 0.005 per cent. to 0.5 per cent., and in these cases there is considerable individual variation with regard to the concentration necessary to produce dermatitis. (6) Most normal skins fail to react with a 10 per cent. solution of "A" although some were found to react with a 5 per cent. solution. (7) The degree of sensitivity of the skin to dyed fur found to exist in fur dermatitis cases ranged from at least 200 times to 2,000 times that found in non-fur dermatitis cases. (8) It is possible for at least a 0.5 per cent. solution of "A," or its oxidation products, to be formed in the fluid secretions of the skin when in contact with the

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died fur. This type of concentration of solution does not produce dermatitis in non-fur dermatitis cases. (9) Dermatitis resulting from a single application of a minute concentration of a chemical towards which the skin is allergic may persist for several weeks.

OPTICS

Ophthalmic Ointments and Solutions.—S. M. Kiang ("National Medical Journal of China," February, 1931) has investigated the relative value of myotics and mydriatics applied in the form of solutions and ointments. In experiments with pilocarpine, atropine, homatropine, and eserine applied in the forms of aqueous solution, ointment, and oil solution, respectively, the clearest results were found in the comparative study of pilocarpine in ointment and in aqueous solution. The action of the ointment is longer and stronger, the maximum being attained in a shorter time. In the case of atropine and homatropine, they did not show so remarkable a difference between these two forms of applications, as compared with that occurring in pilocarpine. Their respective prolongation of the action of ointment is not very remarkable, and the intensity of mydriatic effect is about the same. Eserine ointment and oil solution of eserine (physostol) is obviously superior in the duration and intensity of its myotic effect, as compared with those of the aqueous solution of the same percentage. Physostol and eserine ointment did not show great differences in action. Judging from available cases, it would seem that ointment acted a little longer and stronger. The number of experiments is not numerous enough to generalise on the findings. They should be continued to secure more accurate result in the future.

Ophthalmia Neonatorum.—M. S. Mayou, in a paper read at a meeting of the British Medical Association ("Lancet," August 15, 1931), said in his experience notifications during the last fifteen years had not decreased at all. Twenty per cent. of children in the blind schools had lost their sight following ophthalmia neonatorum. Midwives were trained to recognise the disease, but medical students did not get the same opportunities. Often drugs were used in much too concentrated a form through lack of knowledge among medical men. The conjunctival epithelium was very thin at birth and the fornices had no lymphoid tissue. If silver nitrate or other irritant was applied at birth lymphoid tissue was produced in 48 hours. The treatment was constant irrigation with cold lotion, since cold inhibits the growth of the gonococcus. Eusol 1-10 made a good lotion if not too recently prepared. After each irrigation the conjunctival sac was filled with acriflavine 1-1500 in castor oil. The nurse charted the amount of discharge found at each irrigation. Silver nitrate helped to clear the discharge towards the end of the attack. General treatment was as important as local. Debilitated children were more likely to get corneal ulceration. If possible the mother should be admitted to breast-feed the child. A valuable treatment was to nurse the children in open-air wards. Vaccines and milk injections were extremely dangerous, since they lowered resistance and might cause corneal ulceration.

School Myopia.—A. Sorsby, at the annual meeting of the British Medical Association ("Lancet," August 15, 1931), said that this problem was the problem of the development of myopia as a whole. The most important contribution made during the present century was that of Steiger, who considered hypermetropia, emmetropia, and myopia a continuation of the same unbroken process. Long and short eyes, like tall and short individuals, were variations from a common mean. The curves of statistics of large numbers of refraction cases were not truly binomial; but a binomial curve was obtained if diseased eyes were excluded. Mr. Sorsby suggested the division of myopia into two types—one being a physiological variant, the second pathological. Trön, Vogt, and others had thrown doubt on the hypothesis that myopia is simply a

question of the axial length of the eye. An eye of +4 dioptres might have the same axial length as a -6 dioptre eye from different curvatures of the various refracting surfaces. Many so-called pathological changes in myopic eyes were developmental in origin, possibly hereditary-determined characteristics. During school life the hypermetropic eye was stationary and the myopic eye tended to progress in degree. This broad statement had many exceptions. Most school myopia became manifest at about the age of 12. Theoretically, the growth of the eye was thought to be complete at 8 years. Why, asked Mr. Sorsby, should there be in certain children a readjustment of axial length or of the position or strength of the refractory media?

Eyesight of Motor Drivers.—N. Bishop Harman, in dealing with this subject at the annual meeting of the British Medical Association ("Lancet," August 15, 1931), stated that the London General Omnibus Co., in rejecting drivers, found that many rejected persons were unaware of defective vision. Ability to read a number-plate at 25 yards should not be considered apart from field of vision. A driver should be able to see a pedestrian and observe his actions; but even 6/9 vision might be useless if there is no peripheral vision. Even 20 per cent. loss of field of vision was dangerous to a driver. He thought good binocular vision helpful to a good driver, although one-eyed men could sometimes do well. Cars had been driven at 100 miles an hour by drivers with one eye bandaged. He himself would not employ a one-eyed driver. The difficulty often found in reversing by drivers was due to one eye only being used. A one-eyed driver with a Wellingtonian nose was definitely unsafe. A fair test was the driver's ability, or lack of ability, in playing moving ball games, such as tennis. Another factor to be remembered was that some people have defective light sense, and though safe in daylight were dangerous at night. Defective colour vision caused confusion in the interpretation of signals. Signals should be given by lights of different shape rather than colour. Many accidents were due to defects in reaction time and defective attention. Fatigue changes were more manifest in crowded traffic. Professional drivers needed a higher standard of vision than private drivers, since they were more liable to fatigue and difficult conditions.

PHARMACOLOGY

Toxicity of Turpentine.—Writing to "The British Medical Journal" (3679, 77), F. P. Maitland records a case of fatal poisoning of an adult from drinking 6 oz. of turpentine. A quotation from the 1928 edition of Taylor's "Principles and Practice of Medical Jurisprudence" is given, stating that a recorded case of fatal poisoning of an adult by turpentine had not then been traced, hence the interest of the present record. A *post-mortem* examination showed the effect on the lining of the stomach.

Reversible Coagulation of Nerve Proteins.—W. D. Bancroft and J. E. Rutzler ("Proceedings of the National Academy of Sciences," Washington, D.C., 17, 2) find that intravenous injections of sodium thiocyanate solutions lead to more rapid recovery than normal from anaesthesia due to ether, amylal or morphine. It is considered that sodium thiocyanate by acting as a peptising agent counteracts disturbances due to coagulation of nerve proteins. Thus it prevents anaphylactic shock in rabbits sensitised with white of egg solution and obviates death from a lethal dose of strychnine or histamine. Potassium cannot be substituted for sodium on account of its greater toxic action.

Pharmacology of Thallium.—J. C. Munch and J. Silver ("Technical Bulletin No. 238," U.S. Department of Agriculture) state that the lethal dose of thallium salts (thallous acetate or sulphate) for rats and mice is about 25 mgm. per kilogram of body weight. Death occurs usually within three days after eating poisoned

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food, but increase in dosage does not hasten expiry. Thallium is equally toxic as strychnine to rodents and several times the destructive action of arsenious acid or red squill. It is recommended that care should be taken against the indiscriminate use of thallium salts as a rat poison owing to its extreme toxicity to human beings. Thallium is a cumulative poison and elimination is slow, two to three months being required for complete removal from the body.

Activity of Thyroid Preparations.—J. H. Gaddum and M. Hetherington have investigated ("Quarterly Journal of Pharmacy and Pharmacology," 4, 2, 183) the activity of thyroid preparations when given by mouth to mice. The authors point out that since all the numerous effects of thyroid administration, with the exception of the serological reactions of thyroglobulin, can also be obtained by injecting thyroxine, there can be no doubt that thyroid preparations owe their specific activity to the thyroxine which they contain. It has, however, been found that, when both preparations are given by the mouth, the activity of crude thyroid preparations, in which the thyroxine forms part of a larger molecule, is greater than that of the pure thyroxine which they contain, probably because the cruder preparations are more readily absorbed from the intestine. The activity of various thyroid preparations has been measured by recording the effect on the total carbon dioxide production. The effect measured in this way bears a linear relationship to the logarithm of the daily dose. Data have been collected which show that the curve connecting the effect of various drugs with the logarithm of the dose is practically linear. The activity of thyroid preparations given by mouth to mice is only roughly proportional to their thyroxine content, and wide discrepancies may occur between the activity as measured by the thyroxine content and that determined by experiments on mice.

PHOTOGRAPHY

Photographic Sensitivity.—S. E. Sheppard and E. P. Wightman ("Photographic Journal," July, 1931) state that the effect of sodium sulphite on photographic plates differs from that of potassium bromide in that (1) it considerably lowers sensitivity when treatment is given before exposure and also lessens the latent image developability (treatment after exposure), though to a less extent; and (2) it decreases gamma or the slope of the straight-line portion of the H. and D. curve. Bromide, except in strong concentrations, is effective only when present during exposure, and it does not tend to lower gamma. It is believed that potassium bromide has etching effect on sensitivity and latent image specks compared with sodium sulphite.

The Gastro Photor.—Stanley Wyard ("Lancet," July 25, 1931) describes this instrument whereby the interior of the human stomach can be photographed. The apparatus consists of two tubular metal cameras set at the end of an oesophageal tube. Each camera is divided into four compartments, and each compartment carries a photographic film. No lens is employed, but the image is focused on to the film by a pin-hole. Each camera has eight pin holes, so that sixteen photographs are obtained at each exposure. Between the cameras is an electric lamp. The pin-holes are covered by Bowden wire passing up the tube to a handle which, when pressed, uncovers them. The photographic images on the films are only 5 m.m. in diameter, the enlarged prints from them have a diameter of 7.5 c.m.

Antifogging Agents in Developers.—A. P. H. Trivelli and E. C. Jensen ("Journal of the Franklin Institute," August, 1931) have investigated a number of substances to see if they behave in the same way as 6-nitrobenzimidazole, i.e., are antifogging agents in photographic emulsions and are also suitable as antifogging agents in developers to replace potassium bromide. Among a series of amino-acids and other organic compounds only cysteine hydrochloride and thiobarbituric acid showed antifogging properties in the developer. The antifogging

action is less than that of 6-nitrobenzimidazole, and produces more density depression. A preliminary microscopical investigation of the action of antifogging agents such as potassium bromide, potassium iodide, 6-nitrobenzimidazole, cysteine hydrochloride, thiobarbituric acid, and thioacetanilide was made.

New Long-life Tank Developer.—The following formula has been devised by Kodak, Ltd., and is strongly recommended for use by photo-finishers:—

FORMULA D. 75

Kodak Vertical Tank Developer

	10 gall.	20 gall.	40 gall.
Solution I			
Water (125° F.) ..	1 gall.	2 gall.	4 gall.
Elon	1½ oz.	2½ oz.	5 oz.
Solution II			
Water (125° F.) ..	1 gall.	2 gall.	4 gall.
Sodium sulphite (crystals) ..	1 lb.	2 lb.	4 lb.
Sodium bisulphite ..	15 oz.	1 lb. 14 oz.	3½ lb.
Solution III			
Water (160° F.) ..	1 gall.	2 gall.	4 gall.
Sodium sulphite (crystals) ..	14 oz.	1½ lb.	3½ lb.
Hydroquinone	5 oz.	10 oz.	1½ lb.
Pyro	1½ oz.	2½ oz.	5 oz.
Solution IV			
Water (125° F.) ..	1 gall.	2 gall.	4 gall.
Sodium carbonate (crystals)	5 lb.	10 lb.	20 lb.

Make up to 10, 20 or 40 gallons respectively with cold water.

To obtain the full "quality" and "life" from D. 75 the developer must be mixed as follows:—Four solutions should be prepared as indicated. Use enamel or earthenware containers for the preparation of the solutions. If galvanised buckets or containers are used in any way, chemical fog and veiling of the films will result. Pour 2 gallons of water in the perfectly clean tank. Make solution No. 1, and add to water in tank. Stir well. Make Solution No. 2 and add to tank. Stir well. Continue in the same way with Solution No. 3 and then No. 4. Finally, fill up to 10, 20 or 40 gallons and stir well. Leave for one hour before use. Ideal temperature 68° F. Starting time of development 10 minutes. The temperature should be kept at 68°. Do not use below 65° or above 70°. Allow one minute variation in time for each degree above or below 68°, i.e., 8 mins. at 70°, 13 mins. at 65°. Local conditions may call for adjustment of standard times. Check negative quality constantly and adjust time as required. Maintain level of developer with D. 75A (strengtheners). Note that D. 75A is not the same as D. 75. There is a reason for this. D. 75 made properly and "topped up" with D. 75A should produce (in a 40-gallon tank) quality negatives on 480-500 spools a day for 10 to 14 days. The quality and type of D. 75 depends, of course, upon "spools developed" and "time in use" plus quality of chemicals used and care in making.

FORMULA D. 75A

Kodak Vertical Tank Developer Strengtheners

	1 gall.	2 gall.	4 gall.
Water (125° F.)	½ gall.	1 gall.	2 gall.
Elon	275 gr.	1½ oz.	2½ oz.
Sodium sulphite (crystals) ..	7½ oz.	15 oz.	1 lb. 14 oz.
Sodium bisulphite	3½ oz.	7½ oz.	15 oz.
Hydroquinone	1½ oz.	2½ oz.	5 oz.
Sodium carbonate (crystals) ..	1 lb. 11 oz.	3 lb. 6 oz.	6½ lb.
Water to make	1 gall.	2 gall.	4 gall.

This stock strengthening solution should be used 1 part to 1 part water for topping up.

Mix as follows:—Having thoroughly cleaned the earthenware or glass container, pour into it the necessary quantity of clean, warm water (125° F.). Add the elon to the water and dissolve. Continue with the other chemicals in the order named, making sure that each chemical is dissolved before adding the next. Finally, add water to make up quantity and stir well.

Economy in Northern Ireland

A MEETING of the Central Pharmaceutical Committee under the Northern Ireland Health Insurance Scheme was held on September 22, for the purpose of considering the proposed cut in the Health Insurance terms. Mr. W. J. HARDY, who presided, said the Government proposed to make a cut to bring them into line with their colleagues in England and Scotland. They were pleased to have with them Mr. Elwood, of the Ministry of Labour, who was secretary of the National Health Insurance Medical Benefits Committee.

Mr. ELWOOD said it had been deemed expedient by the Government to fall into line with the economies that were being effected in Great Britain. Chemists in England had agreed to accept a cut in their dispensing fees and profits equivalent to one-ninth to bring them into line with the cut that was being made in the case of the insurance doctors. The doctors in Northern Ireland had accepted the same proposals, agreeing to a cut of 1s. per annum during the time the country was in financial need. In Scotland, where the system was somewhat different, the chemists had also agreed to accept cuts, and, in the case of Northern Ireland, their Government proposed to ask the Committee to agree to a deduction of 7 per cent. from the amount paid to chemists month by month, commencing with the accounts for the month of October—that is, that the cuts should take effect as from October 1. In asking them to accept that reduction he was authorised to give two assurances; the first was that this proposal for a cut was not based upon any consideration of the justification or otherwise for the present remuneration of insurance chemists, but was due solely to the financial position. The second assurance was that if at any time it was necessary or expedient to open the question of remuneration, it would be opened on the basis of the existing rates as they were before the cut.

The CHAIRMAN said he did not think the chemists of Northern Ireland would be behind their colleagues in

England and Scotland in their loyal endeavour to assist their own Government in the national emergency. He was sure they would agree to make this sacrifice, which was a real sacrifice to many of their members. He hoped the Ministry would take that into consideration. He took it that whether they liked it or not their terms of service would be terminated if they did not agree, but they did want to help the Government in this crisis, and they might as well accept the inevitable.

In reply to a question, Mr. ELWOOD said the cuts would only operate for goods supplied from October 1.

Mr. JOHN ADAMS asked would the old system be re-established when the stringency passed.

Mr. ELWOOD replied that he could give the same assurances as in Great Britain, that as soon as the financial stringency was over, and the necessity for the cut had disappeared, it would be removed.

Mr. DUNDEE said it should be borne in mind that the sacrifice was greater here because chemists had to pay £3 3s. a year to keep open shop, which they had not to do in England or Scotland.

The CHAIRMAN suggested agreement on the same lines as those of the Pharmaceutical Standing Committee of Scotland, that when the time came for this matter to be reconsidered the old rate would be restored. He moved that they agree to accept the cut proposed by the Ministry.

Mr. ROBERT ANDREW, in seconding, said there was sufficient patriotism left in Northern Ireland to do all that was required.

The resolution was passed unanimously.

Mr. A. WILSON expressed thanks to Mr. Elwood for the courtesy which he invariably extended to chemists.

Mr. ELWOOD, in reply, said that the Ministry of Labour had not received a solitary complaint as to the way chemists were discharging their duties under the scheme, which had been running so smoothly that there had been very little left for the committees to do.

Trade Notes

ROBIN HOOD safety razor blades are made in this country by Brooks, Haywood & Co., Ltd., Shiloh Works, Sheffield.

BOTOL.—Continental Laboratories, Ltd., 30 Marsham Street, London, S.W.1, remind chemists that Botol is now available in packages of 100 and 250 tablets as well as in tubes of 20.

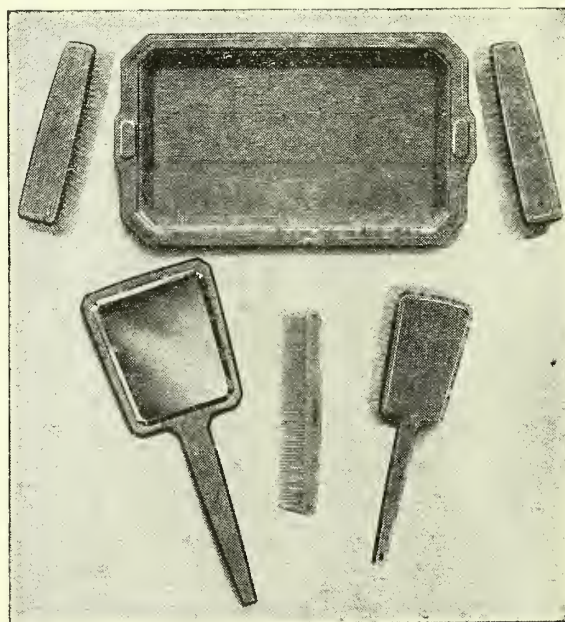
CHRISTMAS GOODS.—Arthur Berton, Ltd., 256 Old Street, London, E.C.1, invite chemists to write for their catalogue of Christmas goods, of which the company can offer an extensive range.

NICOLENE, a tobacco stain remover, is marketed by Nicolene, Ltd., 11 Red Cross Street, Liverpool. It is available in two sizes and through the usual wholesale channels. Showcards and display material are available.

HEATING APPARATUS.—John Wright & Co., Essex Works, Aston, Birmingham, elsewhere in this issue draw attention to the advantages of using gas radiators for warming the pharmacy. Economy and freedom from trouble are among the important matters which should not be overlooked when installing apparatus for this purpose.

LAVENDER WATER.—A new lavender water, Queen Anne, manufactured by Marlborough & Co., 491 Liverpool Road, London, N.7, is advertised elsewhere in this issue and should prove a success. It is put up in attractive crystal flacons, which are generous in size and good value, while the lavender water itself is pleasing and of lasting fragrance. Queen Anne lavender water is being launched with the backing of a substantial national advertising campaign.

XYLONITE PRODUCTS.—The suitability of xylonite products for inclusion in the Christmas order is demonstrated by the accompanying illustration of the Ascot



lady's dressing table set supplied by The British Xylonite Co., Ltd., Hale End, London, E.4. The particular set illustrated is in pale green with a red and gold border design; each article is packed in an attractive box.

Personalities

THE staff of the Ripley branch of Boots, Ltd., have presented a silver-mounted ebony walking-stick to Mr. J. Stanley on his retirement on pension from the man-agership.

MR. WILLIAM T. ROBSON, chemist and druggist, was the successful candidate in a recent by-election to fill a casual vacancy on the Newcastle-upon-Tyne City Council.

MR. G. I. AKEROYD, chemist and druggist, general sales manager of Boots Pure Drug Co., Ltd., Nottingham, has been elected a member of the Council of the Incorporated Sales Managers' Association of the United Kingdom.

Births

Notices for insertion in this column must be properly authenticated.

PARRY.—At the Blue Cottage, Harlow Common, Essex, on September 16, the wife of Ronald Lambert Parry, B.A., LL.B., barrister-at-law, of a daughter.

RANSOM.—At Wymondley Bury, Stevenage, on September 17, the wife of Richard Francis Ransom (William Ransom & Son, Ltd., Hitchin), of a son.

Marriages

GANT—BROWN.—At the Parish Church, West Wickham, Kent, on September 12, Stanley Herbert Gant, chemist and druggist, to Evelyn Mildred Brown.

HASLAM—KNOTT.—At All Soul's Church, Bolton, on September 16, Percy W. Haslam to Vera, daughter of Mr. Herbert Knott, chemist and druggist, Blackburn Road.

LAMB—ASPINWALL.—At the Parish Church, Skelmersdale, Ormskirk, on September 16, George Stanley Lamb, chemist and druggist, to Margaret Aspinwall.

MCINTOSH—GARSIDE.—At Chorlton-cum-Hardy Presbyterian Church, Manchester, on September 7, George B. McIntosh, chemist and druggist, to Ivy Garside.

MAWSON—HEMMENS.—At St. James' Church, Wine-combe, on September 16, R. Stephen Guy Mawson, chemist and druggist, to Phyllis Irene Hemmens.

MERCER—WILLIAMS.—At St. Joseph's R.C. Church, Preston, on September 16, Henry Mercer, son of Mr. F. P. Mercer, chemist and druggist, Preston, to Emmie Williams.

MOORE—ROBERTSON.—At Horfield Baptist Church, Bristol, on September 9, Donald Henry Moore, chemist and druggist, Weston-super-Mare, to Gladys Irene Robertson.

MORRELL-COOPER.—At Newport, Isle of Wight, on September 17, Alan Arthur Morrell, chemist and druggist, to Freda Kathleen Blake Cooper.

PRING—LAURENS.—At St. Martin's Church, Herne, Kent, on September 14, William Edward Dudley Pring, chemist and druggist, elder son of Mr. Wallace Pring, chemist and druggist, Bromley, Kent, to Norah Barbara, daughter of Mr. F. Laurens, Wadhurst, Sussex.

SHARPE—BUTCHER.—At the Church of St. Francis of Assisi, Bournemouth, on September 12, John Robert Sharpe, chemist and druggist, to Christine Helen Butcher.

WALKER—CALLIS.—At Roseberry Road Church, Norwich, on September 10, Wilfred Arthur Walker, chemist and druggist, to Ida Callis.

Deaths

BOWIE.—At 607 Duke Street, Dennistoun, Glasgow, on September 21, Mr. William Bowie, chemist and druggist, aged seventy-eight.

COLLEN.—At a nursing home, Ipswich, on September 7, Mr. William Cresswell Collen, chemist and druggist, aged sixty-eight.

GAMBLE.—At Southwold, Suffolk, on September 17, Mr. Arthur George Gamble, chemist and druggist, aged sixty-four. Mr. Gamble had for many years carried on business in Abbeygate Street, Bury St. Edmunds, but ill-health caused his retirement, and he removed to Southwold. At Bury St. Edmunds he was associated with the activities of St. Mary's Church, and he took keen interest in the friendly society movement.

HOLLOWAY.—At his residence in Bournemouth, on September 21, Mr. Joseph Charles Holloway, for many years assistant-auditor to Parke, Davis & Co.

KENNEDY.—At Leven Terrace, Edinburgh, on September 6, Mr. William Kennedy, chemist and druggist, aged fifty-six.

NICHOLSON.—At his residence, Heaton Mount, Heaton Norris, Stockport, on September 17, Mr. John Nicholson, chemist and druggist, aged eighty. Mr. Nicholson had carried on the pharmacy in Prince's Street, Stockport, which was established by his father over eighty years ago. He was the oldest member of the Peace Masonic Lodge, and he was a P.P.S.G.D.

SLATER.—Suddenly, on September 14, Edwin Slater, chemist and druggist, Kingswinford, aged seventy-one. Mr. Slater established his business over forty years ago, and took an active part in the management up to the time of his death.

STALKER.—Suddenly, on September 10, whilst playing golf on the Bush Hill Course, Palmers Green, London, N., Mr. George Stalker, chemist and druggist, aged forty-three. He was a native of Whitehaven, where he served his apprenticeship with Wilson & Kitchin, Ltd. Mr. Stalker enlisted in November 1914 and went out to France in the following May. In July 1917 he was awarded the Military Medal and also received a commission in the Royal Engineers. After the Armistice he became manager of the Walthamstow, London, E., branch of Boots, Ltd., and recently he was appointed to a branch at Palmers Green, N.13.

Business Changes

THE new address of the Registrar of Business Names is Prince's House, 37 Kingsway, W.C.2.

MR. H. A. MARTIN, chemist and druggist, 58 Willow Bridge Street, Leicester, has acquired the Shirley Pharmacy, Stratford Road, Shirley, Birmingham.

MR. B. SIMPSON, chemist and druggist, has acquired the business of Mr. T. H. Fookes, 34 Vicarage Lane, East Ham, London, E.15.

BEWELLS, LTD., chemists, have purchased the business of Mr. B. Simpson, chemist and druggist, 582 Romford Road, London, E.12.

MR. F. A. H. MATTHEWS, chemist and druggist, has taken over the business of Mr. W. R. Hart, chemist and druggist, 111 Elm Grove, Southsea; Mr. Matthews will trade as Matthews Bros.

THE offices and warehouses of Coates & Cooper, Ltd., 41 Great Tower Street, London, E.C.3, have been removed to 94 Clerkenwell Road, E.C.1. Telegraphic address: Synthetica, Smith, London; telephone number: Clerkenwell 4100.



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THE ART OF DISPENSING.

The tenth edition was published in 1926. It has been thoroughly revised and considerably improved, while maintaining the features which have made it so popular with several generations of students. All chemists should keep this book in the dispensary for ready reference when difficulties arise in the course of the day's work. Price 8s., by post 8s. 6d.

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THE PHOTOGRAPHIC CHEMIST.

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DISEASES AND REMEDIES.

Now in its sixth edition (March, 1931). It has been carefully revised by an experienced medical practitioner and parts of the book have been rewritten. Price 5s., by post 5s. 3d.

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Information Department

INFORMATION WANTED

Postal or telephone information with respect to makers or first-hand suppliers of the undermentioned articles will be appreciated.

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E/229. Chamberlain's hair stain	W/229. Higgins' pine liniment
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The CHEMIST AND DRUGGIST

VOL. CXV SEPTEMBER 26, 1931 NO. 2694

Public Health

THE annual report of the Chief Medical Officer of the Ministry of Health for the year 1930 was issued recently (Stationery Office, 4s. net). In the section dealing with the Insurance Medical Service a paragraph is devoted to investigation of insurance prescribing, where it is stated that the arrangements for this purpose have continued to work satisfactorily. The steady decline which has been observed in recent years in the average cost per prescription may be taken, states the report, as evidence of increasing appreciation by insurance practitioners of the fact that, while the insured person is entitled to be supplied with all proper and sufficient medicines and prescribed appliances, and it is the duty of the practitioner to order all such as are necessary for adequate treatment, it is his duty also to refrain from ordering what is not reasonably necessary. A further indication of the improvement that has taken place in the attitude of many practitioners in this matter is afforded by the decline in the number of cases which it has been found necessary to refer to Panel Committees. According to the report, the National Formulary appears to be finding general acceptance and only a comparatively small number of insurance areas now remain in which it has not been adopted. The advantages of the general adoption of a single formulary of this kind are, in the opinion of the Chief Medical Officer, so great that it may be hoped that the few exceptions remaining will soon disappear. It is understandable and indeed proper, he continues, that individual practitioners should have their own favourite methods of treatment—and the adoption of a formulary in no way restricts their freedom in this respect, since they can always order any combination of drug they think useful, subject to writing the prescription in full instead of being able to order it by a short title as can be done when it is included in the Formulary. Under the heading "Influenza" it is reported that during the year 1930 fewer deaths were ascribed to that disease in England and Wales than in any year since 1911; early in 1931, however, influenza was reported to be prevalent, and the weekly return of deaths became sufficiently large to justify the use of the term epidemic. Both clinical reports and statistical returns indicated, however, that the recrudescence was on a far less serious scale than that of 1929. Some interesting paragraphs occur in the section of the report devoted to meat and food inspection and examination. Referring to arsenic in apples, the report states that for some years past the United States Government have taken steps to ensure that apples from America and destined for this country shall be free from any undesirable quantity of arsenious spray residue, and assurances have been

given that every endeavour will be made to limit such residue to an amount not exceeding 0.01 grain of arsenic trioxide per pound of fruit. In April, 1930, however, several samples of apples which had come from Virginia, U.S.A., were reported to have arsenic residue in excess of the amount permitted. It has been brought to the notice of the Ministry that certain brands of imported canned peas are dyed with methylene blue. The colour is not apparent on opening the can, as the dye is present in the peas in the form of its "leuco" base, but after a few minutes' exposure to the air the peas become green. In response to requests which have been received, the Chief Medical Officer has included a brief note on insulin treatment. During 1930 the following licences were issued under the Therapeutic Substances Act for the importation or manufacture of therapeutic substances coming within the operation of the Act:—

	New Licences	Renewals	Total
Manufacturing ..	11	6	17
Import ..	25	15	40
Research ..	—	—	—

In 1929, states the report, the Standing Joint Advisory Committee approved proposals for the revision of the Board of Trade medical scales III and IV applicable to merchant ships. A special Committee, which met frequently during the year, has prepared a new Scale which is intended to apply to all ships required by law to carry doctors, and will replace the previous Scales I and II, which were applicable respectively to North Atlantic passenger ships and to other passenger ships. The list of drugs, dressings and appliances has been completely revised with a view to bringing it up to date. Twenty-five pages of statistical appendices complete the report.

Supplies for Welfare Clinics

THE letter in our issue of September 19, under the above title, is a timely reminder of a state of affairs that is seriously affecting the sales of many articles usually associated with the chemist. Starting with the supply of milk and proprietary foods to indigent mothers, many welfare clinics now carry a stock of the more commonly used drugs as well as other articles used in the nursery, such as feeding-bottles and accessories. These are usually sold at prices which are rarely above cost, although in a few clinics an attempt has been made to charge mothers, who can afford to pay, prices somewhat higher. No citizen interested in the future of the race can regard the ideals of the clinics with any other feeling than that of admiration; it is against the undoubted abuses that are associated with their work that attention should be directed. Chemists who are town councillors, or who are associated with bodies that have control of the rates, have now an opportunity of ventilating the whole subject, since the expense of keeping up this work is now a direct charge upon the local rates, with the exception of a small direct grant from the State. There are two ways along which such criticism should be directed:—(1) The examination of the lists of articles sold by these clinics and the cutting out of as many as possible; (2) a rigid inquiry should be made into the incomes of all those who attend, with the view of giving treatment and supplying goods only to those mothers who are not in a position to pay for them. This would be a start and the time is very suitable for it to be made.

Faraday: A Centenary Retrospect

OF no Englishman is it more fitting to celebrate centenaries than of Michael Faraday. The year 1913 was the centenary of his appointment at the Royal Institution as chemical assistant under Sir Humphry Davy; in 1925 was celebrated his discovery of benzene; and this year steps are being taken to commemorate what was perhaps his greatest discovery, namely, the induction of electric currents, which laid the foundation for all the dynamo-electric inventions wherewith the energies of mankind have been transcended beyond all measure.

The life of Faraday (1791-1867) is a flawless gem in the cabinet of biographies. His aims, his emotions, his intercourse with his fellows, his devotion to his work and his achievements were all of so elevated a

character as to make him a fitting exemplar for all who desire to serve their day and generation without any undue regard for their own rewards. In 1813, just after he had entered upon his duties at the Royal Institution, he writes of his appointment in terms revealing an ardour for science that promised an abiding enthusiasm. His note on that occasion was to this effect: "After being a journeyman (to a book-binder) . . . I gave up my business and by the interest of Sir H. Davy filled the situation of Chemical Assistant to the Royal Institution of Great Britain, in which office I now remain, and where I am constantly even of the lowest kind." engaged in observing the work of Nature and tracing the manner in which she directs the arrangement and order of the world." In another memorandum concerning his entry upon a scientific career he speaks of his "desire to be engaged in scientific occupation,

And, when writing to Dr. Paris in 1829 concerning his first introduction to Sir Humphry Davy, he states that his desire was "to escape from trade, which I thought vicious and selfish, and to enter into the service of science, which I imagined made its pursuers amiable and liberal." Faraday's letters to his friend Benjamin Abbott are expressive of the noble sentiments not uncommon to young men raised in an atmosphere similar to that of the house in which he was reared. Michael Faraday succeeded, where too many have failed, in carrying throughout the whole of his life the high and sweet purposes with which he set out, to the vast benefit of all men.

The conjunction of the Royal Institution, Sir Humphry Davy and Michael Faraday founded a school of chemistry and physics which is a cause for national pride. It was a fortunate thing that Faraday came into association with Davy. This, we are told, was brought about in the first instance by his introduction to Davy's lectures by Mr. Dance. There can be little doubt that Faraday was already moved by a wish to seize this opportunity. He says that his readings in chemistry were in Mrs. Marcet's "Conversations on Chemistry,"

in which he "delighted." From this work he would learn how the authoress herself had been led to write her book because of the benefit she had gained by her attendance at the "excellent lectures delivered at the Royal Institution by Sir Humphry Davy." In her preface she speaks of the extreme value of experimental teaching, an aspect of the science which must have confirmed the bias of Faraday for facts and experiments which he affirmed over and over again in his notes and other writings.

The earlier years of Faraday at the Royal Institution were occupied in researches of a varied character. Among the subjects he took in hand were the analysis of caustic lime, the escape of gases through capillary tubes, experiments with the wire gauze safety lamps

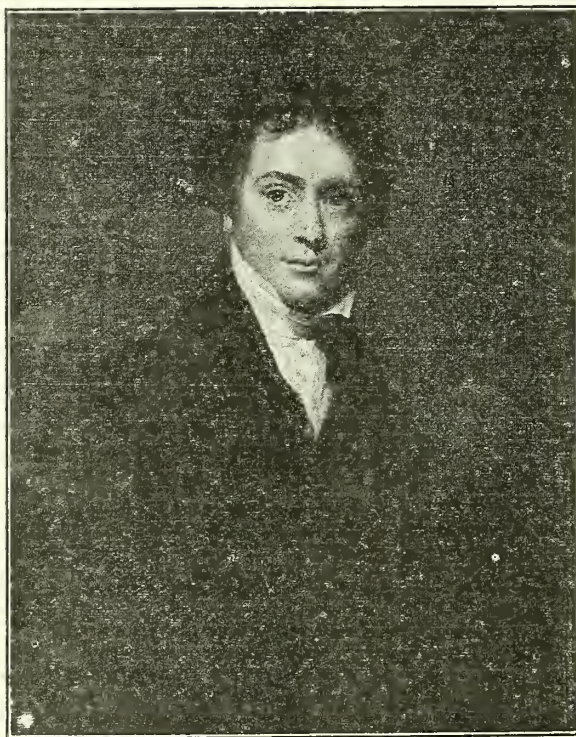
in connection with Davy's famous researches, boracic acid, an endeavour to produce a rustless steel, the separation of manganese from iron and the liquefying of chlorine. Much of his time was employed in the preparation of the lectures of Davy and Brande. It cannot be said that Faraday was much influenced by any associations with pharmacy, although he was intimate with Brande in the work at the Royal Institution. He was, however, united in a firm friendship with Richard Phillips, at that time chief of the laboratories of the Apothecaries' Society of London and editor of the London Pharmacopœia, of which publication Faraday makes mention in some of his letters to Phillips. It was probably to the pharmacopœial work of this friend that Faraday was alluding when he tells Phillips that "You know I consider you as a Prince of chemical critics."

The great discovery made by Oersted in 1819 that an electric current

deflects the magnetic needle, in conjunction with the work of Ampère and Arago, set afoot Faraday's speculations as to how magnetism could be converted into electricity. It having been shown that electricity could be converted into magnetism, he imagined it must be possible to establish the converse. The experimental work proving this intuition in respect of the correlation of forces came to full fruition in this month of September in 1831. What is perhaps the first intimation of his success is contained in a communication to Phillips, dated September 23, 1831. This paragraph from the letter is worth quoting:—

"I do not think I thanked you for your last Pharmacopœia. I do so now very heartily. I shall detain this letter a few days that I may send a couple of my papers. . . . I am busy just now again on Electro-Magnetism, and think I have got hold of a good thing, but can't say; it may be a weed instead of a fish that after all my labour I may at last pull up. I think I know why metals are magnetic when in motion though not (generally) when at rest."

In a later letter to Phillips (November 29, 1831) he gives a summary of the investigations in which he was



MICHAEL FARADAY

After the Painting by H. W. Pickersgill

engaged during the previous two months. He says that his results have been embodied in a paper for the Royal Society to be entitled "Experimental Researches in Electricity," divided into four sections:—I, On the Induction of Electric Currents; II, On the Evolution of Electricity from Magnetism; III, On a New Electrical Condition of Matter; IV, On Arago's Magnetic Phenomena. "There is a bill of fare for you, and, what is more, I hope it will not disappoint you." Faraday then proceeds to give "the pith of all this." Every man who has a mind to realise himself in art, literature or science must do so within certain limits to be apprehended by himself alone; consequently he will gather to himself rules and maxims suitable to his conditions. Faraday did this, and one of his maxims was: "Work, finish, publish." No better example of his ability to fulfil his own intention can be found than in this concentrated experimental effort and the publication of its results.

It was also to Richard Phillips that Faraday addressed, in 1846, a communication concerning his speculations on "Ray-Vibrations," wherein he expresses himself in terms indicating that he visualised a set of vibrations now accepted as the foundation of the doctrine of the electro-magnetic theory of light. Throughout the whole of his work on electricity, magnetism and light the dominant note heard continuously is the interconvertibility of natural forces. It was this profound sense of the essential unity of them which, surely, led him on one occasion to write to Professor Whewell: "I must confess I am jealous of the term atom!" The many other discoveries of this great man, his contributions to the spread of scientific knowledge, his labours on behalf of the State, the honours conferred upon him at home and abroad, and the beautiful and sustained tenor of his life provide a perfect background to a career devoted to the "Service of Science," which did in very deed contribute to the making of its "pursuer" "amiable and liberal." Michael Faraday was a great man and a Christian gentleman.

Faraday Centenary Exhibition

ON August 24, 1831, Michael Faraday, in his laboratory at the Royal Institution, made the discovery in which lies the origin of the dynamo and starting-point of the utilisation of electric power in the service of man. On September 23, 1931, was opened the Faraday Centenary Exhibition at the Royal Albert Hall, London, a fitting tribute to the genius of a great man.

A TRIUMPH OF ILLUMINATION

On entering the hall to view the present exhibition the visitor is struck, first, by the beauty of the lighting system, and, secondly, by the amazing collection of electrical and scientific apparatus, all of which has sprung from the original work of Faraday. The illumination of the exhibition is achieved principally by light reflected from the surface of a vast roof canopy. This is stated to be worth nearly £1,000, and is of cotton woven in Lancashire and specially glazed. It is fireproof, ventilated, and contains 60,000 square feet of material made up of sixty sectors dyed primrose and cream and arranged alternately. Hoisting the canopy into position was a task of great difficulty occupying forty men for a week raising it a few inches at a time. Beams of light from 200 concealed projectors stationed around the gallery, each containing a 1,000-watt lamp, are trained on the canopy. The resulting reflected light is equivalent to the illumination of half a million candles or 300 electrical horse-power. Thirty-two half lanterns light the pilasters supporting the dome and a giant tubular lantern forty feet in length, containing sixty lamps of 500 watts each, illuminates the memorial dais. The statue of Michael Faraday, which is a cast from a marble statue by Foley in the Royal Institution, stands in the centre of this, and is further illuminated by projectors concealed around the base. Arranged around this stand are interesting personal exhibits, including "The Common-

place Book," which, curiously enough, is open at the entry, "Remedy for Warts." The advice given is to "cut the stems of the herb celandine and rub the warts as frequently as possible with the liquid issuing from them." Radiating from the Faraday statue the eight sections of the exhibition trace the development of Faraday's discoveries. At the outer circumference of the arena are exhibited the utilities which are the products of to-day's scientific and electrical civilisation.

FARADAY'S WORK IN CHEMISTRY

While Michael Faraday will be remembered, perhaps, mostly for his great experiments in the field of electricity his earliest scientific work was mainly in chemistry. On Stand F (Faraday's researches in chemistry) are to be seen exhibits arranged by the Royal Institution, which include such products as perchloride of carbon, hexachloroethane, discovered by Faraday in 1821; protochloride of carbon, tetrachloroethylene, also discovered by Faraday; model of tube used by Faraday for the preparation and purification of protochloride of carbon; synthesis of perchloride of carbon; condensate from compressed oil-gas which is similar to the material in which Faraday discovered benzene; distillation apparatus such as Faraday used; Bramah press actually used by Faraday to purify benzene; Ure's eudiometer used by Faraday for analysis of volatile organic substances; straight eudiometer used for the same purpose; apparatus for combustion analysis used by Faraday for the same purpose; extract from Faraday's diary giving the determination of the specific gravity, vapour density and analysis of benzene; liquefaction of ammonia, as done by Faraday in a sealed tube; Thilorier's refrigeration mixture of solid carbon dioxide and ether; Faraday's apparatus for the liquefaction of gases at low temperatures; and a table of Faraday's observations of temperatures obtained with Thilorier's mixture *in vacuo*. His researches in electro-chemistry included the investigation of many aspects of the subject, and the exhibits on Stand G show a number of the experiments by which he laid the foundation of this branch of electrical science. On the stand devoted to the Chemistry Section (arranged by the Chemistry Sub-committee for the Federal Council for Chemistry), specimens are shown of alloy steels.

DISCOVERY OF BENZENE

Section 2 of this stand is of great interest to chemists, as it deals with benzene, first discovered by Faraday on May 18-20, 1825. The exhibits on the stand include the following:—Cylinder of oil gas and lamp; benzol petrol pump; nitrobenzene and aniline; naphthalene preparation of mauve; rosaniline (fabric); early Manchester dyes (fabrics); alizarin; intermediates; azo-dyestuffs (fabrics); chrysoidine and tropæoline (fabrics); congo red (fabric); model of azo-dye factory; triphenylmethane dyestuffs (fabrics); triphenylmethane dyestuffs (samples); azine dyestuffs (fabrics); indigotin (sample); indigoid vat dyestuffs (fabrics); anthracene and allied vat dyestuffs (fabrics); artificial silks; coloured flowers; bakelite; chloronaphthalenes; drugs derived from benzene; and photographic chemicals. Drugs are shown on this stand, including thyroxine, insulin, adrenalin, ephedrine, and local anaesthetics, microscopic stains, hypnotics, antiseptics and drugs for protozoal diseases. Stand T (also arranged by the Chemistry Subcommittee for the Federal Council for Chemistry) deals with the liquefaction of gases, glass, catalyses, and the relation of gold (and other substances) to light. The electrolytic production of metals is shown on Stand U. Particular interest attaches to the reproduction of Faraday's laboratory (erected and lent by the Wellcome Historical Medical Museum), which is on view on the first floor.

In conclusion, it should be remembered that the organisation of the exhibition has been made possible by the assistance of a number of institutions, societies, associations, trade associations, firms and individuals. The Faraday Centenary Exhibition is one of the outstanding scientific events of the year, and should on no account be missed.

Chlorine: A Phase in its History

By Leonard Dobbin, Ph.D.

II—Compound or Element?

WHEN decomposition by means of electricity was observed, just at the close of the eighteenth century, Henry endeavoured to decompose muriatic acid gas by the prolonged passing of electric sparks through it in a tube over mercury. He observed that a certain amount of hydrogen was always set free, and that the surface of the mercury was attacked. He supposed that this attack of the mercury was due to oxidation, and concluded that some water was always retained chemically united to even the most carefully dried muriatic acid gas. The question remained undecided as to whether muriatic acid gas, dried as thoroughly as possible, was an acid in the contemporary sense of that term—i.e., as comparable with sulphuric "acid" (sulphur trioxide) and carbonic "acid" (carbon dioxide), or whether it was the "hydrated acid," corresponding to an as yet unknown and wholly hypothetical "acid."

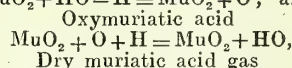
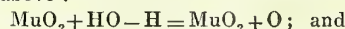
Berthollet in 1806 published his opinion that dry muriatic acid gas was really a hydrated acid, related to an unknown anhydrous acid; and this view was adopted by Gay Lussac and Thenard. The two last-named chemists endeavoured to determine the proportion of water present in the dry acid gas by passing it over heated litharge and collecting and weighing the water that was found. They obtained water, of course, in abundance, which they supposed to have been present in the muriatic acid. In reality they were misled here by trusting to analogy, because they assumed that the muriates (chlorides), like salts in general, contained oxygen in their composition. In accordance with the prevailing views regarding salts, the litharge was assumed to have entered as a whole into the composition of the muriate of lead formed in the experiment, and to be there associated with the supposed anhydrous acid of the muriatic acid gas; while the water that was evolved was taken to have been united in that gas, prior to the experiment, with the anhydrous acid.

As the result of further investigations, Gay Lussac and Thenard arrived at the following views regarding muriatic acid gas and oxymuriatic acid (chlorine):—Muriatic acid cannot exist separately in the anhydrous condition, but only as the hydrate, this hydrate being dry muriatic acid gas. Oxymuriatic acid is a compound of oxygen with the hypothetical anhydrous muriatic acid. In oxymuriatic acid there is just as much oxygen united with this anhydrous acid as is contained in the quantity of water necessary to convert the anhydrous acid into dry muriatic acid gas; and hence muriatic acid gas, by loss of its hydrogen, becomes oxymuriatic acid, while oxymuriatic acid, by uniting with hydrogen, whereby a part of its oxygen becomes water, is converted into muriatic acid gas. The introduction at this point of some contemporary formulæ may make the conceptions of Gay Lussac and Thenard clearer.

SUPPOSED REACTIONS

Muriatic acid, which was not known in a separate state but only, according to Berzelius, "in combination with some oxide or other," or with water in "common muriatic acid gas," was supposed to be a compound of an unknown combustible radical, Murium, symbol, Mu, with oxygen, and was represented by the formula MuO_2 or $\text{Mu}+2\text{O}$. Oxymuriatic gas, or oxymuriatic acid, was supposed to be a compound of muriatic acid with more oxygen. Its formula was MuO_2+O . Water, at the period, was commonly represented as HO . Common muriatic acid gas, or dry muriatic acid gas, was muriatic acid in combination with water, which was supposed to be essential for its existence, and it was formulated MuO_2+HO .

Employing these formulæ to represent the actions mentioned above:—



the respective relationships are shown.

Gay Lussac and Thenard endeavoured, but without success, to find direct proof of the presence of oxygen in oxymuriatic acid. Whereas Berthollet had regarded oxymuriatic acid as muriatic acid loosely united with oxygen, it was now considered to be a compound of the hypothetical anhydrous muriatic acid with oxygen, and to be of the most stable description. It was only indirectly that evidence of the supposed oxygen content of oxymuriatic acid could be obtained, inasmuch as it united directly with certain metals to form muriates (identical with those obtained by the interaction of the metals, or their oxides, with aqueous muriatic acid), and these, from analogy, were assumed with confidence to contain metallic oxides. It was not found possible, however, to obtain from these muriates either oxygen or a substance containing oxygen except in interactions in which water was present.

Gay Lussac and Thenard were the first to state, in 1809, that the various known phenomena were capable of explanation on the assumption that oxymuriatic acid was an elementary substance. They averred, notwithstanding, that they were better explained by the hypothesis which regarded it as an oxidised anhydrous muriatic acid. Contemporaneously with Gay Lussac and Thenard's experiments, Davy was also carrying on investigations upon oxymuriatic acid. Up till 1809 Davy employed the usual name of oxymuriatic acid and regarded it in the commonly accepted light; but in 1810, having uniformly failed in many endeavours to obtain direct evidence of the presence of oxygen in oxymuriatic acid or the muriates, or of water in muriatic acid gas, he definitely abandoned the older view, and advanced with confidence the opinion that oxymuriatic acid was really an elementary substance possessing characters comparable in various respects with those of oxygen.

OPPOSITION TO NEW VIEW

Apart from the British principals in the chlorine controversy, Berzelius, in Sweden, was the chief upholder of the established opinion that oxymuriatic acid was a compound substance which included oxygen in its composition, and reference may conveniently be made here to considerations which he advanced in opposing Davy's views. His objection to these views was founded chiefly upon his own theory that all salts were to be looked upon as composed of basic and acidic oxides in chemical union with each other. If Davy's view were accepted, the muriates could not be reconciled with this theory. In presenting a short statement of his opinion, in 1813, Berzelius summarised the difference between the old theory and that of Davy as follows:—

"According to the old hypothesis, muriatic acid is composed of a combustible radical still unknown, and of oxygen. Muriatic, like several other acids, cannot be obtained in a separate state. It does not seem capable of existing except in combination with some oxide or other. When combined with water it constitutes common muriatic acid gas. In this compound the water constitutes a base for the acid, just as I have proved it to do in concentrated sulphuric and nitric acids. . . . I have proved that muriatic acid neutralised by a base contains exactly twice as much oxygen as the base with which it is saturated; that is to say (to employ the expression of Dalton) that the acid is composed of one atom of radical and two atoms of oxygen."

"According to the new hypothesis, oxymuriatic gas, in the present state of our knowledge, must be considered as

an elementary body, though its great specific gravity, and the property which it has of crystallising with water at a low temperature, lead one to conjecture that it is a compound, and even that it contains oxygen. The illustrious author of this hypothesis has given it the name of *chlorine*. Chlorine has the property of combining with an atom of oxygen; and the oxide thus produced is called *euchlorine*. Chlorine combines likewise with an atom of hydrogen. The compound formed is muriatic acid. . . . Muriatic acid parts with its hydrogen . . . easily . . . since it is decomposed . . . by potash and soda, for example. . . . What we have hitherto called muriate of potash and muriate of soda is nothing but a compound of chlorine and the metallic radicals of these oxides. . . . Chlorine combines with all combustible bodies except carbon and perhaps also boron, but it combines with the oxide of carbon."

In opposing the new view, Berzelius states that he considers it established "by the doctrine of definite propor-

tions in chemistry" that oxymuriatic acid is composed of one atom of radical and three atoms of oxygen; and in accordance with this doctrine he holds that when hydrogen unites with oxymuriatic gas it forms muriate of water, without any excess either of water or of muriatic acid. He adds:—

"The want of agreement between the new theory and the doctrine of definite proportions is such that I am surprised it could ever gain credit. The muriate, nitrate and sulphate of ammonia possess analogous properties and are all classed among ammoniacal salts. We find the same analogy among the compounds of potash with the same acids, and, of course, are disposed to class them all among the salts. But according to the new hypothesis, a muriate of potash cannot exist; and what was formerly considered as a salt contains, notwithstanding its exact analogy with the salts, neither an acid, nor oxygen, nor even potash itself."

U.S. Imports of Crude Drugs for 1930

THE growth during recent years of the United States imports of crude drugs is rather remarkable in view of the tendency to substitute manufactured commodities for the natural products. It is, however, chiefly due to the ever-increasing production of proprietary lines, insecticides, etc. During a period of ten years it is estimated that the increase of imports of crude drugs and botanicals is not less than 140 per cent., the figures for 1921 being 68,215,000 lb., and for 1930 no less than 165,176,000 lb. Although values were much higher in 1921 than those current during 1930 the total values of imports of crude drugs landed during 1930 was \$8,765,000 against \$5,386,000 in 1921. The peak was reached in 1928 when total imports were 113,454,000 lb., valued at \$10,112,000. The range and quantity of crude drugs cultivated in the United States is limited chiefly to ginseng, hydrastis, belladonna, stramonium, cascara sagrada, digitalis and wormwood. The following details of imports of some of the chief products are recorded:—

Chinchona.—About 2,000,000 lb. was landed during 1930, with a value of \$679,000; of this total 15,600 lb. were from Peru while imports of East Indian bark arrived via the Netherlands. During 1930 the production in Sumatra was 1,580,000 kilos, an increase of about 481,000 kilos on the 1929 production.

Liquorice Root.—The imports for 1930 were 57,372 lb., showing a decrease on 1929 when 88,267 lb. was imported. The cause of the decline in the quantities landed during 1930 is said to be due to the considerable stocks carried over from the previous year. Russia supplied about 18,500 lb., Turkey about 14,000 lb., and Iraq about 10,000 lb., of last year's imports.

Senna.—The imports for 1930 totalled 2,343,000 lb., with a value of \$166,000. The average imports of the former nine years was 2,600,000 lb. About 60 per cent. of the imports were from India and the remainder from Egypt. In 1929 imports totalled 2,900,000 lb.

Pyrethrum.—The imports of this insecticide were mainly drawn from Japan and totalled 8,536,000 lb., valued at \$1,333,000 against 2,236,000 lb., valued at \$785,000 in 1921. Production in Japan during 1930 showed a slight increase over the 1929 figures of 14,560,000 lb. In 1928 production was estimated at 12,525,000 lb. Production in Dalmatia since the war has been comparatively small, being about 1,500,000 lb. on average over the past ten years.

Nux Vomica.—Imports were about average, totalling about 2,200,000 lb., with a value of \$56,400, while in 1929 the arrivals amounted to 3,260,000 lb., with a value of \$84,000. Shipments from India to all destinations during the fiscal year 1928-29 totalled 4,879,750 lb., of which the United States took 3,025,000 lb.

Ergot.—Imports totalled 291,300 lb., against 228,000 lb. in 1929 and 299,400 lb. in 1928. Supplies were

drawn chiefly from Germany (112,300 lb.), Spain (61,300 lb.), Russia (8,700 lb.). Prior to 1914 Russia was the chief source of supply. Exports from Russia during 1930 totalled about 57,000 lb., against 196,245 lb. in 1929.

Aloes.—Imports during the past ten years have averaged 1,000 lb., with 1,005 lb. landed in 1930 and 961 lb. in 1928.

Papain.—Imports during 1930 show a considerable decline as compared with 1929, being 77,000 lb. against 132,000 lb., with values of \$174,000 and \$299,000 respectively. Exports from Ceylon totalled 79,338 lb., with a value of \$167,400 against 128,465 lb., valued at \$234,450 in 1929. Of these exports between 80 and 90 per cent. were shipped to the United States.

Psyllium Seed.—The total imports from all sources for 1930 was approximately 1,670,000 lb., the large majority of which was shipped from France. The increase in arrivals in the United States is described as phenomenal, the usual imports being little more than half that quantity.

Orris Root.—Imports in 1921 totalled 225,000 lb., and gradually increased to 700,000 lb. in 1928. In 1930 there was a decline to 180,500 lb.

Buchu.—Imports of late years have been steady and have averaged approximately 100,000 lb., or about half the total production of South Africa.

Ipecacuanha.—Imports totalled only 46,000 lb., against 69,000 lb. in 1929 and 88,000 lb. in 1927. Values for these years were \$108,000, \$175,000 and \$254,000 respectively.

Sarsaparilla.—Imports were 141,000 lb., valued at \$21,000 against 108,000 lb., worth \$23,000 in 1929.

A GUIDE to Afrikaans, one of the two official languages of South Africa, has been compiled by L. W. Van Os (E. Marlborough & Co., Ltd., 51 and 52 Old Bailey, London, E.C.4, 3s.). The vocabularies are arranged in three parallel columns, the third giving the Afrikaans pronunciation. An elementary grammar is also included.

THE fourth annual issue of the "Year Book of the Bermudas, British Guiana, British Honduras and the British West Indies" (Thomas Skinner & Co., 330 Gresham House, Old Broad Street, London, E.C.2, 7s. 6d.), includes a large coloured map, illustrations and historical sketches, forming a comprehensive guide-book and work of reference for shippers and others.

MENYANTHES TRIFOLIATA.—A monograph on *Menyanthes trifoliata*, Linn., has been completed by Carl Stousland (Universitätsverlag von Robert Noske, Borna-Leipzig), for presentation to the Faculty of Philosophy at Basle University. Mr. Stousland has divided the work into sections as follows:—(1) History; (2) culture; (3) commerce; (4) botany; (5) chemistry; and (6) summary. The well-illustrated work is comprehensive and includes an exhaustive bibliography.

Book-Keeping for Chemists

By S. Howard Withey, F.C.I., etc.

X—Preparing Accounts for Income-Tax Purposes

ALTHOUGH the figures which have been incorporated in the periodical profit-and-loss account will enable the chemist—whether established on his own account, a partner of a firm, or a director of a limited liability company—to ascertain the amount of net profit actually realised during the financial year, the tabulation will have to be subjected to considerable adjustment in order to determine the balance of profit for purposes of income-tax Schedule D. Some of the items which have been charged against the profits will not be allowed to stand as deductions by the tax authorities, and on the other hand some of the items shown on the credit side of the ordinary profit-and-loss account, and which have had the effect of increasing the balance of profit as shown in that account, may be allowed as deductions when computing the taxable profit. Moreover, there will most likely be certain amounts which the chemist is entitled by the statutes to deduct from the figure of profit quite apart from the items recorded in the ordinary profit-and-loss account.

The most satisfactory method of arriving at the balance of profit for tax purposes consists of preparing a separate income-tax profit-and-loss account which should show, on the credit side, the figure of net profit according to the ordinary certified profit-and-loss account, followed by the various items which will not be considered as statutory deductions, and on the debit side the amounts claimed as deductions in addition to those already debited. If any transactions of the following nature have been charged against the profits, the amounts involved should be added back to the profit when preparing this income-tax account:—

The cost of improving or extending the shop or business premises, including structural alterations beyond the average expenditure on additions to shop fittings, show-cases, fixtures, or other similar assets, including furniture.

Payments made in the purchase of new or additional vending machines, bottle-filling machines, mixers, sifters, etc. Amounts written off the book value of the lease, shopfront, land, machines, implements, appliances, etc., to cover the depreciation caused by wear and tear, obsolescence, or effluxion of time.

Any sum which may have been charged against the periodical profits and set aside to create or add to a reserve account, reserve fund, sinking fund, or suspense account. Goodwill which has been actually written off during the year.

Such items as ground rent, annual interest, etc., from which income-tax at the highest rate in force should have been deducted by the chemist at the time of payment. In this connection it should be borne in mind that the intention is to tax income at its source, and that, consequently, the payer of the tax has the legal right to deduct the tax from such payments.

Neither the proprietor of a drug, dispensing, or photographic business, nor a partner of a firm, can draw any remuneration from the business as distinct from a share of the profits; therefore if any sum has been charged against the profits representing the salary of the chemist or of any partner, the amount will be added back to the profit for tax purposes. This applies also to payments made to an inactive partner, and to interest on capital debited in the account. Items of a personal or private nature which are not directly connected with the business will not be allowed as deductions, and in the case of a limited liability company such items as preliminary expenses, and expenses incurred in obtaining or re-arranging the company's share capital, or in connection with any other requirements of a definitely capital nature, will not be permitted to stand as debits.

As a consequence of the complexity of the law relating to income-tax, and the difficulties experienced by tax-

payers in correctly interpreting the various provisions embodied in the Acts, a considerable number of wholesale and retail chemists are over-assessed each year, for it is no part of the duty of tax officials to render assistance which is calculated to reduce assessments. Even in those cases in which a fair assessment has been made by the authorities, the chemist has been compelled, in his own interests, to seek a greater or lesser degree of professional or legal aid, and perhaps both, in the computation to his exact tax liability.

There is a material difference between the term "net profit," as understood by the average chemist, and the term "statutory income," which is all that the authorities are concerned with. The chemist is legally entitled, for example, to deductions in respect of any transactions of the following nature, whether the amounts actually appear in the ordinary profit-and-loss account or not:—

The cost of maintaining the shop or business premises in a proper state of repair.

The cost of repairing or replacing worn-out machines, cases, fittings, fixtures, etc.

Debts which have been written off as irrecoverable, and doubtful debts which have been placed in the hands of a solicitor or debt-collecting agency.

Rent of the shop or business premises. If the chemist pays rent and also resides on the premises, an amount not exceeding two-thirds of the annual rent may be deducted. When the property is owned by the chemist, the Net Schedule A assessment or annual value can be deducted, providing no charge for rent has already passed through the books.

Actual wear and tear of fixtures, fittings, furniture, machines, trade utensils, and other wasting assets, calculated on the gradually diminishing book value of each asset. This allowance is really intended to cover only the cost of replacing actually worn-out assets, or portions thereof, and no deduction should be expected from the cost of buying new or additional assets during the year of assessment.

Local rates and taxes and National Insurance contributions. Loss of stock through fire, burglary or embezzlement.

Insurance premiums paid on the life of the chemist or his wife covering death, or for a deferred annuity, providing the annual premiums do not exceed 7 per cent. of the capital sum secured at death.

Expenses incurred in the removal of stock, or in the compulsory removal of the business.

Interest charged by the bank for conducting the chemist's current account. The bank pays the tax on these amounts.

Any sums which, although they have been debited by the chemist to a reserve or suspense account, could have been charged against the periodical profit had he preferred to do so.

Cash received from tenants or sub-tenants, providing no charge has been made in the account in connection with the same premises, and providing the rents have been treated in the books as income, but to avoid apportioning the rent charged, it is preferable however to show rent received on the credit side of the profit and loss account.

The income-tax year commences on April 6 and ends on the following April 5, but instead of assessing the value of their stock as at the latter date the majority of chemists take stock, balance their books and prepare the final accounts and balance-sheet at December 31 each year. For the tax year 1931-32 ending as previously stated on April 5, tax is payable as to three-quarters on January 1, 1931, and the remaining quarter on July 1 following. The statutory income of the first incomplete year is the actual income of that period. For the second year, the first complete year's income, and for subsequent years, the income of the year preceding. Providing the figure can be arrived at without complications, and can be substantiated by vouchers and other documentary

evidence, no great difficulty will be experienced in obtaining an agreed figure of profit. For a complete year the basis will be the certified profit-and-loss account of the year preceding the year of assessment as aforesaid; if such an account cannot be produced a summary of cash received and cash paid during the year will have to be submitted. The following example will serve to indicate the method of ascertaining the taxable profit from an ordinary profit and loss account.

The proprietor of a retail drug and photographic business discovers that he has realised a net profit of £475 15s. 4d. for the year ended December 31, 1930, and has to ascertain the amount of profit for income-tax purposes (in this case for the tax year 1931-32), bearing in mind that he resides on the business premises; that one-third of the life insurance premiums paid during the year was on the life of his son; and that Schedule A assessment is £240 gross and £200 net. His certified profit-and-loss account contained the following figures:—

Dr.				PROFIT-AND-LOSS ACCOUNT YEAR ENDED DECEMBER 31, 1930				Cr.			
	£	s.	d.		£	s.	d.		£	s.	d.
To Wages and salaries	368	17	2	By Gross profit from trading account ..	1,628	19	2				
„ Drawings—self	150	0	0	„ Discounts obtained	51	7	6				
„ Rates and local taxes	141	7	6	„ Dividends received, net	72	10	0				
„ Income tax	49	11	3	„ Rent received from Luton property ..	25	0	0				
„ Gas, water and electric lighting ..	65	17	4	„ Profit on sale of motor-ven	6	6	0				
„ Mortgage interest	125	0	0								
„ Life insurance	22	3	3								
„ Interest on capital	100	0	0								
„ Advertising and stationery	96	5	8								
„ Bank charges and interest	11	2	6								
„ Bad debts written off	5	5	1								
„ Carriage and cartage	17	2	2								
„ Depreciation	25	0	0								
„ Travelling expenses, etc.	17	7	7								
„ Discounts allowed	4	9	8								
„ Postage and sundries	26	18	2								
„ Goodwill written off	50	0	0								
„ New showcases	31	10	0								
„ Balance, being net profit for the year ..	475	15	4								
	£1,784	2	8		£1,784	2	8				

The taxable profit would be arrived at by preparing an account on the lines indicated below:—

Dr.				INCOME-TAX PROFIT-AND-LOSS ACCOUNT				Cr.			
	£	s.	d.		£	s.	d.		£	s.	d.
To Dividends (taxed before receipt) ..	72	10	0	By Net profit as per ordinary profit-and-loss account	475	15	4				
„ Rent received	25	0	0	„ Drawings—self	150	0	0				
„ Profit on sale of van	6	6	0	„ Income tax	49	11	3				
„ Schedule "A" assessment (net), two-thirds of £200	133	6	8	„ Mortgage interest	125	0	0				
„ Balance, being profit for tax purposes..	791	17	2	„ Interest on capital	100	0	0				
				„ Depreciation	25	0	0				
				„ Goodwill	50	0	0				
				„ Showcases	31	10	3				
				„ Life insurance	22	3	0				
	£1,028	19	10		£1,028	19	10				
				By balance .. b/d. ..	791	17	2				

It should be understood that the above is an extreme case, the figures being purely hypothetical to illustrate the method of computing the chemist's tax liability. With regard to the life-insurance premiums, although one-third of £22 3s. 3d., or £7 7s. 9d., was paid on the life of the chemist's son, the total of £22 3s. 3d. should be added back when preparing the income-tax account and a separate claim lodged in respect of the £14 15s. 6d. paid on the life of the chemist himself.

ANOTHER METHOD

In those cases in which the chemist is unable to submit a reliable profit-and-loss account, but has kept detailed records of all his cash transactions, it is possible to determine the taxable profit by preparing a summary of the cash received and the cash paid under the different headings, and by making certain additions and deductions from the closing cash balance, apart from any transactions of the nature referred to above. It would be necessary to make out a list of

book debts outstanding at the close of the year or period, also a list of amounts owing by the chemist to creditors and trade suppliers, and to assess the value of the stock on hand at cost price or market price, whichever is the lower. The basis for the computation would have to be the amount by which the cash balance at the end of the period exceeded the balance at the beginning of the period, as shown in the summary, this difference being looked upon as profit realised during the period. If the total of the book debts at the close of the period was greater than the total outstanding at the commencement, the difference would have to be added as profit, as also would the amount, if any, by which the total sum owing to creditors and suppliers at the close was less than the total owing at the beginning. In the event of the book debts having decreased, however, the difference should be deducted as a loss, and the same applies to any increase in the total sum owing to creditors; while

any increase in the total value of the stock must be added as profit for tax purposes, although if the stock carried is less than it was at the commencement of the period, the decrease may be treated as a loss when tabulating these figures. The following example shows the procedure to be adopted by the chemist who desires to ascertain the taxable profit from a record of cash receipts and payments.

The proprietor of a dispensing business discovers that owing to failure to keep a complete set of account books, he is quite unable to draw up a profit-and-loss account showing the amount of profit made during the year ended December 31, 1930, and he desires to ascertain the figure on which he will have to pay income tax for the year 1931-32. He finds that the stock has increased by £186 19s. 6d. compared with the value at December 31, 1929, and that the sum owing to sundry trade creditors has gone up by £89 15s. 4d. On the other hand, the book debts have declined by £36 10s. 9d., including a debt of £7 7s., which he has good reason to believe will prove to be irrecoverable. The cash received

and paid during the year was summarised in the following form, and the Schedule A assessment was £185 gross.

It is scarcely necessary to remind the chemist that the

maximum relief from taxation to which he is entitled by the statutes can be obtained only by keeping a proper set of books on the modern double-entry principle.

Dr.				SUMMARY OF CASH RECEIPTS AND PAYMENTS—Year ended December 31, 1931										Cr.		
Receipts				£	s.	d.	Payments				£	s.	d.			
To Balance, January 1, 1931	..	..	..	276	18	2	By Local rates and taxes	..	..	..	62	7	3			
„ Shop takings	..	..	..	1,972	15	6	„ Income-tax	..	..	..	14	9	10			
„ Rents received	..	..	..	186	10	0	„ Assistants' wages	..	..	..	281	10	0			
„ J. Wells, repayment of loan	..	..	..	52	10	0	„ Private subscriptions	..	..	..	10	10	0			
							„ Motor-car repairs	..	..	..	9	8	6			
							„ Stamps and postages	..	..	..	15	17	2			
							„ Double-fronted shop installation	..	..	..	60	0	0			
							„ Carriage and cartage	..	..	..	18	9	5			
							„ Heating and lighting	..	..	..	40	2	2			
							„ Stock purchases	..	..	..	1,217	18	6			
							„ Advertising and window cards	..	..	..	81	5	9			
							„ Mixers and sifters	..	..	..	32	5	0			
							„ Bottle-filling machines	..	..	..	38	10	0			
							„ Sundry shop expenses	..	..	..	50	2	2			
							„ Balance, December 31, 1931	..	..	..	555	17	11			
				£2,488	13	8					£2,488	13	8			

The income-tax computation would be made as follows:—

Dr.				PROFIT-AND-LOSS ACCOUNT FOR INCOME-TAX PURPOSES										Cr.		
				£	s.	d.					£	s.	d.			
To Increase in creditors	..	..	..	89	15	4	By Increase in cash balance	..	..	..	278	19	9			
„ Decrease in book debts	..	..	..	36	10	9	„ Income-tax	..	..	..	14	9	10			
„ Rents received	..	..	..	186	10	0	„ Private subscriptions	..	..	..	10	10	0			
„ Repayment of loan	..	..	..	52	10	0	„ Motor-car repairs	..	..	..	9	8	6			
„ Schedule A assessment	..	..	..	185	0	0	„ Double-fronted shop installation	..	..	..	60	0	0			
„ Balance, being profit for tax purposes	..	..	..	80	16	6	„ Mixers and sifters	..	..	..	32	5	0			
							„ Bottle-filling machines	..	..	..	38	10	0			
							„ Increase in stock	..	..	..	186	19	6			
				£631	2	7					£631	2	7			
							By balance b/d	..	..	..	80	16	6			

Opium Consumption in India

GOVERNMENT POLICY OF REGULATION

THE Government of India have issued a press communiqué explaining the policy which they desire to adopt in regard to regulating the consumption of opium in India. It is stated that the League of Nations standard of consumption was not applicable to India, because the use of opium in India as an indulgence was entirely unknown. The policy of the Government was to achieve the suppression of the use of opium in excess. In fact, what is termed as a high consumption of opium hardly exists in British India, if Burma and Assam are excluded. It is restricted, generally speaking, to a few "black spots," and it is now proposed to deal with these according to local conditions. It may be recalled that a Conference on this question was held recently, when provincial representatives were called. The Viceroy, in his opening speech, discussed some of the problems, and further discussion took place at the conference. Since then considerable investigation has been made. It has now been ascertained that parts of Assam and Calcutta might correctly be termed "black spots," and Orissa also, is so far as smoking is concerned, accounts for 20 per cent. of the consumption there. There was also a case for investigation in the Ferozepore district in the Punjab. The Government of India further propose to suggest to the local governments that in selected places other than admitted "black spots" where the total consumption is high, an analysis of the figures of consumption should be made in order to ascertain, if possible, to what extent harmful doses are common.

CONSUMPTION REDUCED CONSIDERABLY

In regard to remedies, the communiqué states that the policy of high prices, reduction of the number of shops, and restriction of the limit of sale and of personal possession has proved effective everywhere in reducing consumption over a period of years to a remarkable degree. So far as administration of opium to children is concerned, propaganda and welfare work are the only possible means of combating it. In Calcutta, it is proposed to suppress smoking, by attacking excessive consumers direct by registering, in the first instance, all those who require doses of over 12 grains and closing the register to new comers. Restrictions on sale and possession are also contemplated. Smuggling is another subject discussed in the communiqué. By this illicit traffic, and from the point of view of expediency by the danger of driving consumers to substitute other more pernicious indulgences, such as cocaine or ganja, for opium, registration and rationing of consumers, except in cases of excessive consumers, were not favoured. In this respect, the attempt on the part of Local Governments to equalise sale prices on their respective borders by mutual consultations was recommended. Lastly, as regards the important and technical question of the supply of opium in the form of wrapped tablets, further correspondence with the Local Governments is considered to be necessary before the Government of India can decide whether the demand for opium in this form will be sufficient to justify the initial expenditure on machinery that will be necessary if the supply of tablets is to be undertaken.

IMPERIAL INSTITUTE.—The latest annual report of the Imperial Institute, covering the year 1930 (price 2s.), gives a brief summary of the various activities of the Institute during the year. The statements made include the information that ginger can be profitably grown in Nigeria and that pyrethrum flowers of good quality have been raised experimentally in Kenya.

Trade Report

Where possible scales of prices of chemicals are given for bulk down to small quantities. Prices recorded for crude drugs, essential and fixed oils and coal tar products are for fair sized wholesale quantities. Qualities of chemicals, drugs, essential and fixed oils, etc., vary, and selected brands or grades would be at higher values

28 Essex Street, W.C.2, September 24, 1931

For some few weeks the markets have had to contend with a series of shocks and unexpected developments which have all had a definite bearing on conditions. The financial crisis in Europe was followed by the change in Government at home and the introduction of a supplementary budget incurring further burdens on industry. It is to be hoped the latest shock of the departure of the pound sterling from the gold standard, which has affected commerce to the extent of bringing about a temporary suspension of normal trading, is the climax and that a period of steady conditions will be enjoyed once the present upheaval has passed. With the pound sterling steady at its world economic value the trade of this country should materially benefit. Manufacturers and exporters will be well advised to make the fullest use of this move to more favourable conditions by keeping their prices down to a level that will meet world competition and attract the foreign buyer. In pharmaceutical chemicals the position is at the moment nominally unchanged, and business is moving on spot on small lines. Inwards shipment business is at a standstill, foreign exporters being unable to quote. Values of those products for which there is no home source of supply are now nominal. In the majority of cases where supplies are drawn from home makers and are also obtained by importation there is as yet no definite change. Those products which are the subject of Conventions, in which both home and foreign makers are concerned, seem likely to be affected by the new conditions, and it may mean the breakdown of some of these agreements. The question that is bound to arise is, will the home makers be willing to agree to an advance in prices which will no doubt be desired by the foreign makers. The situation puts the home makers in a strong position, and it will be for them to decide whether they use it to consolidate their position in this market or continue to allow the foreign material to come in. Whatever may be the result it seems that values in this market, with the exceptions of those products not produced here, are not likely to be affected to any material extent. In crude drugs the position is much more complicated and values in many cases will have to be advanced to compensate for the lower international value of the pound. Already shipment business has been suspended in the majority of lines. The spot values are marked up from five to ten per cent. by holders as a precautionary measure. Buyers are in no hurry to rush their orders and it is probable that actual business transacted so far for small lots on spot has been done at very little over former rates. Importers and consumers are showing full confidence in the ability of the pound sterling to eventually steady down at a level very little below the former gold value, and for that reason they prefer to wait a clearer vision of the position. Speculation is entirely absent from the markets and any attempt to force up prices is certain to fail. In essential oils the conditions are very similar to those ruling in crude drugs and the dislocation of business is even more marked. Shipment offers are coming to hand for a few lines, but they are in foreign currencies and serve no useful purpose. Spot values are generally mentioned at a premium on former rates. Here again in most cases buyers are not over-anxious to place orders, preferring to await developments. There has been a very fair volume of business in fixed oils, especially in turpentine, for which higher prices now rule. Linseed oil also shows an advance and these markets are firm. The demand for industrial chemicals tends to broaden and is generally very fair. Prices in this market are not likely to be affected to any extent by international financial considerations, such movements will be few and unimportant. In coal tar products business continues on a fair scale and here also the relative value of world currencies is not likely to bring about any material change in prices. All quotations given are subject to confirmation.

Exchange Rates on London

The following is a list of the chief Continental and other exchange rates at the opening on Thursday morning:—

Centre	Quoted	Par.	Sept. 21	Value of the £
Amsterdam ..	Fl. to £	12.107	10—10½	16/11
Berlin ..	Mks. to £	20.43	17½—18	17/6
Brussels ..	Belga to £	35	29—30	16/10½
Copenhagen ..	Kr. to £	18.159	17½—18½	19/8
Lisbon ..	Esc. to £	110	109½—110½	20/-
Madrid ..	Ptas. to £	25.22½	46—46½	36/9
Milan ..	Lire to £	92.46	79—81	17/4
Montreal ..	Dol. to £	4.86½	4½—4½	18/9
New York ..	Dol. to £	4.86½	4.09—4.12	16/10½
Oslo ..	Kr. to £	18.159	16½—17½	18/9
Paris ..	Fr. to £	124.21	103—105	16/9
Prague ..	Kr. to £	164.25	6135—145	6/17/1
Stockholm ..	Kr. to £	18.159	16—17	18/2
Vienna ..	Sch. to £	34.58½	31—33	18/6
Zurich ..	Fr. to £	25.2215	20½—21½	16/7½

a. belga = 5 francs. b. nominal

Bank rate 6 per cent.

Pharmaceutical Chemicals, etc.

With but few exceptions prices quoted are nominal and subject to sellers' confirmation. In some cases sellers have withdrawn from the market pending more settled conditions. It seems likely that values of those products for which we are entirely dependent upon outside sources of supply will have to be advanced, while in the cases of products which are the subjects of Conventions between home and foreign makers the prices may, by mutual agreement, be advanced. This refers especially to such products as aspirin, sodium salicylate, etc. If the home makers decline to adjust their prices foreign shippers will either have to sell at a comparatively lower figure or go out of the market. The position may well lead to the break-up of some of the Conventions. Business has been unimportant and is likely to continue on a very limited scale until the position becomes more stable, as it should do within the course of the next week or so.

ACETANILID is quoted unchanged on a slow market: B.P. crystals and powder, 1s. 4½d. to 1s. 6d. per lb., as to quantity.

AMIDOL is quoted unchanged, with the market very steady: one cwt., 7s.; 56 lb., 7s. 3d.; 28 lb., 7s. 6d.; 14 lb., 7s. 11d. per lb., in 7-lb. tins.

AMIDOPYRIN is steady and some small business is being done: crystals, five cwt., 11s. 11d.; two cwt., 12s. 1½d.; less than two cwt., 12s. 1½d.; less than two cwt., 12s. 4d. per lb., with powder 1½d. per lb. extra.

ASPIRIN.—The market is very steady and business is sustained on a good scale. Home trade: ten cwt., 2s. 7d.; five cwt., 2s. 8d.; one cwt., 2s. 8½d.; 28 lb., 2s. 9d.; 14 lb., 2s. 10d.; 7 lb., 3s.; 1 lb., 3s. 4d. per lb. Export to Colonies and British Possessions: ten cwt., 2s. 7d.; five cwt., 2s. 8d.; one cwt., 2s. 8½d. per lb., f.o.b.; less than one cwt., 2s. 9d. per lb., ex works.

BARBITONE is nominal, with some importers now quoting spot 7s. 6d. to 7s. 9d. per lb.

BENZONAPHTHOL is steady at about 2s. 8d. to 2s. 10d. per lb. on spot.

BENZOIC ACID (B.P.) is meeting with some call and the market is fully steady: quantities, ex works, 1s. 9½d.; spot parcels, 1s. 10½d. to 1s. 11d. per lb., ex store.

BROMIDES.—The tone here is somewhat steadier, and the currency position is likely to lead to better rates for these products. At the moment quoted prices are nominally unchanged: ammonium, 1s. 3½d.; potassium (B.P. crystals), 1s. 2d. to 1s. 2½d.; granular, 1s. 1½d. to 1s. 1¾d.; sodium (B.P.), 1s. 2½d. to 1s. 3d. per lb. for large bulk quantities.

BISMUTH SALTS.—The Convention advise that prices for these products have been reduced from 9d. to 1s. 6d. per lb. The current scale of prices is as follows:—

	8 lbs. and under 28 lbs.	28 lbs. and under 1 cwt.	Not less than 1 cwt.
	Per lb.	Per lb.	Per lb.
	s. d.	s. d.	s. d.
Carbonate ..	7 0	6 6	6 3
Citrate ..	8 4	7 10	7 7
Nitrate cryst. ..	5 5	4 11	4 8
Oxide ..	10 1	9 7	9 4
Salicylate ..	7 8	7 2	6 11
Subchloride ..	9 10	9 4	9 1
Subgallate ..	7 9	7 3	7 0
Subnitrate ..	6 3	5 9	5 6

A rebate of 3d. per lb. will be allowed on sales of not less than 2 cwt. (either for prompt delivery or on contract), provided delivery is completed or paid for within three months. Liquor Bismuthi (B.P.), in W qts., 1s. 2d. per lb.; six W qts., 11½d. per lb.; 12 W qts., 10d.; 36 W qts., 9½d., net cash 14 days. The previous alterations in prices took place on June 25 last, when advances from 2d. to 6d. per lb. were recorded.

BUTYL CHLORAL HYDRATE is quoted unchanged, with business quiet: spot, 14lb., 8s.; 7 lb., 8s. 3d.; 1 lb., 8s. 6d. per lb., in 1-lb. bottles.

CALCIUM LACTATE is in occasional demand, with the market much steadier: spot, 1s. 1½d. to 1s. 3d. per lb., as to quantity.

CHLORAL HYDRATE continues very steady at home makers' prices; business has been slightly better of late: duty-paid crystals, 2s. 11½d. to 3s. 1½d. per lb. as to quantity and packing; foreign, on spot, 3s. 3d. per lb.

CHLOROFORM.—There is no change in makers' prices: in drums, 2s. 3d. to 2s. 6d.; winchesters, 2s. 3½d. to 2s. 6½d.; 2-lb. bottles, 2s. 4½d. to 2s. 7½d.; 1-lb. bottles, 2s. 5½d. to 2s. 8½d.; 8-oz. bottles, 2s. 6½d. to 2s. 9½d.; 4-oz. bottles, 2s. 8½d. to 2s. 11½d., for 10-cwt. down to 56-lb. lots; carriage paid on minimum cwt. lots.

CITRATES.—Convention rates are unchanged: potassium citrate (B.P.), 1s. 7d.; sodium citrate (B.P.C.), 1923, 1s. 3d.; ferri ammon. cit. (B.P.), brown, 1s. 9d. per lb. in 28-lb. lots; 7-lb. lots, 5d. per lb. dearer.

CITRIC ACID (B.P. CRYSTALS).—There has been an absence of business of any importance; prices are nominally unchanged, with some sellers of imported material off the market for the time being: nominally, 10½d. per lb., less 5 per cent., carriage paid. British makers quote 10½d. per lb., less 5 per cent. discount, subject to confirmation.

COCAINE.—Convention rates are unchanged: hydrochloride, 25 oz., 20s. 11d.; 16 oz., 21s. 7d.; and less, 22s. 3d. per oz.; pure, 22s. 11d. up to 24s. 4d. per oz.; 1-oz. tins, 2½d. extra.

CREAM OF TARTAR.—The market is unchanged: foreign material is quoted 75s. to 76s. per cwt., less 2½ per cent. discount, carriage paid, subject to acceptance. British makers quote 99 to 100 per cent. at 78s. per cwt., less 2½ per cent. discount.

CREOSOTE (B.P.) is dull, with spot material at about 1s. 8d. to 1s. 9d. per lb.

ETHER (METHYLATED).—Convention prices are fully maintained: e.g. 0.750, 1s. 1½d.; 0.735, 1s. 2d.; 0.730, 1s. 2d.; 0.725, 1s. 4d. per lb., in W. qts.; 12 W. qts., halfpenny less, and packed in drums or carboys, 1d. less.

GUALACOL CARBONATE is steady, with offers made subject to confirmation: spot, five cwt., 5s. 3½d.; two cwt., 5s. 4½d.; one cwt., 5s. 6½d.; less than one cwt., 5s. 7½d. per lb.

HEXAMINE is moving in fair volume and the market is steady and tends to harden: free-running crystals, spot, from 1s. 9½d. to 1s. 10d. per lb., and less for large contracts.

HYDROQUINONE is unchanged on quotation; market is quiet: ten cwt., 3s. 3½d.; five cwt., 3s. 4½d.; two cwt., 3s. 5½d.; one cwt., 3s. 5½d.; 56 lb., 3s. 6½d.; 28 lb., 3s. 8½d.; 14 lb., 3s. 10½d.; 7 lb., 4s. 0½d.; 1 lb., 4s. 7d. per lb., carriage paid.

LACTIC ACID (B.P.) is about steady on quotation from all sources: market rather quiet: one to 99 ks., 1s. 5d.; 100 to 499 ks., 1s. 4½d.; 500 to 999 ks., 1s. 4d.; 1,000 to 4,999 ks., 1s. 3½d.; and 5,000 ks. and over, 1s. 3d. per lb., in 50 ks., carboys, carriage paid.

MERCURIALS.—There is no change in the fixed sales prices: red oxide, 6s. 10d.; corrosive sublimate, lump, 5s. 10d.; pulv., 5s. 3d.; white precipitate, 5s. 10d.; calomel, 6s. 3d.;

yellow oxide, 6s. 9d.; persulphate, 6s. 1d. per lb., in minimum cwt. lots; 1d. per lb. extra for small parcels.

METHYL SALICYLATE (B.P.) continues at former rates, but prices may advance in due course: one ton and over, 1s. 3d.; five cwt., 1s. 3½d.; one cwt., 1s. 3½d.; less than one cwt., 1s. 4d. per lb.

METHYL SULPHONAL is steady as quoted, with some holders off the market; prices are subject to acceptance: two cwt., 12s. 7d.; one cwt., 13s.; 56 lb., 13s. 5d.; small parcels, 13s. 10d. per lb.

METOL is unchanged on quotation; market is dull: 28 lb., 6s. 9d.; 14 lb., 7s. 3d.; 7 lb., 7s. 9d. per lb., and slightly less for larger quantities.

MILK SUGAR.—Market is inclined to firm up; business has been insignificant: one ton, 41s.; ten cwt., 42s.; two cwt., 43s. 6d. per cwt., in two-cwt. cases, for Continental material, subject to confirmation.

MORPHINE.—Controlled rates are unchanged: pure alkaloid, crystals, 24s. 8d.; precipitated, 24s. 5d.; hydrochloride, powder, 19s. 9d.; crystals, 20s. per oz., with lower prices for quantities.

PARAFORMALDEHYDE is fully steady and may advance: 100 per cent. powder, quantities in kegs, 1s. 3d.; smaller parcels, up to 1s. 5d. per lb.

PARALDEHYDE.—The market is dull: quantities in demi-johns, 10d.; drums, 11½d.; winchesters, 11½d. per lb.; higher prices for small quantities.

PHENACETIN.—Most holders have withdrawn from the market and shippers are not offering; prices quoted are nominal, with the probability of higher values for replacement of stocks: crystals, ten cwt., 3s. 8d.; five cwt., 3s. 9d.; two cwt., 3s. 9½d., and less, 3s. 10½d. per lb., with powder 1½d. per lb. extra.

PHENAZONE is likely to be affected by the rate of exchange, and for the moment old prices are nominal, with most sellers off the market: crystals, ten cwt., 6s. 4d.; five cwt., 6s. 5½d.; two cwt., 6s. 7d.; and less, 6s. 8½d. per lb., with powder 1½d. per lb. extra.

PHENOLPHTHALEIN continues irregular, but most of the cheaper offers are withdrawn: ten cwt., 5s.; two cwt., 5s. 1d.; less than two cwt., 5s. 2½d. per lb.; export, ten cwt., 4s.; two cwt., 4s. 1½d.; less than two cwt., 4s. 2½d. per lb.

PIPERAZINE is nominally unchanged: one cwt., 26s. 10d.; 56 lb., 27s. 8½d.; 11 lb., 29s. 6d.; 2 lb., 30s. 4½d.; less, 31s. 3d. per lb., in 8-oz. bottles; 1-oz. bottles, 31s. 7d. to 35s. 11d. per lb.

POTASSIUM PERMANGANATE (B.P.) is dull: spot, druggists' parcels, about 5½d. per lb.; quantities, in drums, 5½d. per lb.

POTASSIUM SULPHOGUAIACOLATE is unchanged, with the quotation at 3s. 2½d. per lb., in cwt. lots, subject to confirmation.

PYROGALLIC ACID continues at makers' prices; market is quiet: one cwt., 6s. 9d.; 56 lb., 7s.; 28 lb., 7s. 3d.; 14 lb., 7s. 9d.; 7 lb., 8s. 6d. per lb., in 7-lb. tins.

QUININE SULPHATE for the home market is so far unchanged at 1s. 8d. per oz., carriage paid on minimum 200-oz. lots.

RESORCIN meets with occasional business, with the market much steadier: crystals, one cwt., 2s. 9½d.; 56 lb., 2s. 10d.; 28 lb., 2s. 10½d.; small parcels, 2s. 11d. per lb., with powder 1d. per lb. extra, subject to acceptance.

ROCHELLE SALTS.—There is no change in makers' prices: five cwt. or over, in one delivery, 77s. 6d.; less than five cwt., 80s.; less than one cwt., 82s. 6d. per cwt., carriage paid. Pulv. Seidlitz, five cwt. or over, in one delivery, 62s. 6d.; less than five cwt., 64s. 3d.; less than one cwt., 66s. 3d.; double, 68s. 9d., 71s. and 73s. per cwt., carriage paid.

SALICYLIC ACID (B.P.).—Home makers' prices are well maintained: one ton, 1s. 5d.; ten cwt., 1s. 5½d.; five cwt., 1s. 6d.; one cwt., 1s. 6½d.; small parcels, up to 2s. per lb.

SALOL is nominal as quoted and will be affected by future rates of exchange: crystals, two cwt., 3s. 7½d.; one cwt., 3s. 9d.; 56 lb., 3s. 9½d.; smaller parcels, 3s. 10½d. per lb.; powder, 1½d. per lb. extra.

SODIUM BENZOATE (B.P.) is in fair demand and the market is much steadier and not nearly so competitive: one ton, 1s. 6½d., up to 1s. 7½d. per lb. for small parcels.

TARTARIC ACID (B.P.) CRYSTALS.—Prices for foreign material to come forward are nominal: spot material may still be available at the former rates of 10½d. per lb., less 5 per cent., ex wharf. British makers quote 10½d. per lb., less 5 per cent. discount, subject to confirmation.

Crude Drugs, etc.

MOST of the products in this market are affected by the international depreciation in the pound sterling. In such cases shipment quotations have been withdrawn and will be revised in due course, when the financial position becomes clearer. At the moment shipment business is almost entirely suspended. The spot market is of interest. Holders are not attempting to ramp prices, but are taking the precautionary measure of covering replacement costs by adding a slight premium to their former rates. Buyers are certainly showing more interest in all directions, but there is no rush to place orders. The whole position is one that reflects the utmost confidence in the pound and its eventual recovery to but a small margin under its former gold standard value. At the drug auction to be held this morning it is probable that buyers will be more in evidence than they have been at recent sales. Owners of the many lots on offer which have been under the hammer on previous occasions will no doubt be willing to let them go more or less at former rates.

AGAR-AGAR.—All former shipment quotations have been withdrawn and new rates are unobtainable; spot is nominal at the following advances: Kobe No. 1, 4s. 1d.; No. 2, 4s.; Yokohama, 3s. 10½d.

ANTIMONY.—The market quotations are nominal: Chinese crude, spot, £19 10s., and shipment, £13 10s., c.i.f.; Chinese white oxide, spot, £30, and shipment, £21, c.i.f.

BISMUTH.—The metal has been reduced to 4s. 9d. per lb.

CAMPHOR.—Spot quotations of to-day are firmer, with Japanese slabs at 2s. 2d.; no quotation for flowers; tablets, from 2s. 10d. to 3s. per lb. All shipment offers have been withdrawn.

CARDAMOMS.—More business passing; prices firm: bold Ceylon-Mysore, 5s. to 5s. 3d.; mediums, 3s. 6d. to 4s. 6d., small mediums, 2s. 6d. to 3s.; smalls, 2s. to 2s. 6d.; Alleppy greens now 2s., spot; shipment now quoted at 2s. 3d., c.i.f.; Bombay seed, 3s., spot.

CHAMOMILES.—Fair business has been done, with 1930 crop bold flowers selling up to 112s. 6d.; new crop sales have been put through at 120s. to 130s., as to colour. Some advance on these prices is now looked for on spot, with no shipment quotations available. Spot stocks very short.

CLOVES.—The market has been quiet and quoted values are dearer: Zanzibar, spot, from 8½d. nominal; shipment, September, from 7d.; October-December, 6½d., c.i.f.

The landings of Zanzibar in London during the week ended September 19 were *nil* and the deliveries 26, leaving a stock of 621, against 544 in 1930. From January 1 to date, landings of Zanzibar have been 1,541, against 6,182 in 1930, and the deliveries 1,939, against 5,645 in 1930. Landings of Madagascar for the week ended September 19 were *nil* and the deliveries 55, leaving a stock of 1,134, against 1,463 in 1930. Landings of Madagascar this year to date have been 2,320, against 4,924 in 1930, and the deliveries 2,092, against 3,474 in 1930.

H.M. Eastern African Dependencies' Trade and Information Office has received a cable from Zanzibar to the effect that value for clove duty from November 1, 1931, to February 29, 1932, has been fixed at 9 rupees per frasila for cloves, 1 rupee 40 cents per frasila for clove stems, and 1 rupee per frasila for mother of cloves.

COCONUT (DESICCATED).—The market is firm at the higher rates now quoted: spot, fine and medium, fully 18s. 6d. to 20s.; shipment, values, October-November, fully 18s. 3d.

COD-LIVER OIL.—The market is now very firm and shipment rates are dearer, but at the moment undefined. Shippers have withdrawn offers pending a clearer view of the position. Shipments of Lofoten medicinal oil up to September 5 totalled 50,597, against 54,571 at the same time last year. Spot, in minimum five-barrel lots, is nominal at 120s. per barrel.

ERGOT.—Market is firm, with spot mentioned at an advance of 5 to 10 per cent. No shipment offers on the market.

GELATIN is quoted nominally unchanged; spot holders are waiting for shipment quotations, and in the meantime are holding off.

GUM ACACIA.—The spot market shows an all-round advance of about five shillings to seven shillings and sixpence on last week's prices. The shipment market is nominal.

IPECACUANHA.—Spot Matto Grosso has been tentatively mentioned at from 6s. 9d. and upwards. The shipment market is nominal.

MENTHOL.—A sharp recovery in values is recorded here, with spot moving up from 13s. 9d. to 14s., and then to 14s. 3d. per lb. The shipment market is nominal at about 13s. 6d., c.i.f., for October-December.

MERCURY.—The Spanish-Italian group report there is no change in their quotation of £16 15s. per bottle, f.o.b.

PEPPER.—On quotations the market is much dearer and the tone is firm: Lampong, spot, 6d.; shipment, August-October, 5½d.; October-December, 5½d., c.i.f.; Tellicherry, shipment, September-November, 6s., c.i.f.; Alleppy, shipment, September-November, 57s., c.i.f.; white Muntok, spot, 8½d.; shipment, August-October, 7½d.; October-December, 7½d., c.i.f.

PIMENTO is quoted nominally at about 3d. per lb. on spot and at 24s. c.i.f. for shipment October-December.

RUBBER.—The market was active early in the week and considerable business was transacted. Prices advanced and the market was brisk and firm at the close. U.K. stocks are 136,072 tons, against 116,733 tons a year ago. World stocks at end of August totalled 550,310 tons, against 431,822 tons a year ago. No. 1 standard ribbed smoked sheet, sellers, spot, 2½d.; September and October, 2½d.; November, 2½d.; December, 2½d.; January-March, 3½d.

SAFFRON is nominal at last week's figures. No shipment offers, and spot offers are withdrawn.

SEEDS.—**ANISE.**—Spanish 45s., and Russian 30s. per cwt. on the spot. **CANARY.**—Market firm; quotations only: Mazagan, spot, 13s. and 11s. 9d., c.i.f.; Tangier, spot 12s. 6d. and 11s. c.i.f.; Kenitra, spot 12s. 6d. and 11s. c.i.f.

LINSEED.—Mazagan is 14s. and Morocco 13s., spot. **CORIANDER.** 11s. 6d. spot; business done; weevilly sold at 10s. 6d. **CUMIN.**—Malta, spot 47s. 6d., shipment 42s. 6d., c.i.f.; Morocco now 32s. 6d., and for shipment 27s. 6d., c.i.f.

FENUGREEK.—Morocco now 14s. 6d. spot; Tunisian sold at 16s. 6d. **CARAWAY.**—Dutch on spot firm at 21s. 6d. **MUSTARD.** 20s. to 30s. per cwt., according to quality.

SENEGAL.—Spot is maintained at from 1s. 11d. to 2s. per lb. Shipment offers of last week are all withdrawn for the time being.

SENNA.—The opinion is expressed that spot values are all advanced about 10 per cent. on the week. Business has been negligible. The shipment position is obscure, no offers coming to hand.

SHELLAC.—As at present quoted the market is dearer on the week; business is negligible: TN standard orange, spot, 75s.; fine orange, 87s. 6d. to 165s.; pure button, 90s. to 95s.; for delivery, TN sellers, October, 66s.; December, 68s.; for arrival, TN, September-October, 65s. 6d.; October-November, 67s., c.i.f.

TRAGACANTH.—There has been a fair inquiry from America and Central Europe and business has been done. It is expected that most of the better grades will shortly be cleared. Holders are firm and a general advance in prices is anticipated.

WAX (VARIOUS).—The market is quoted nominally unchanged: some spot business has been done and the market is firm and tends to advance. Shipments quotations are nominal. **JAPANESE,** on spot, 50s.; **CARNAUBA,** fatty grey and chalky grey, 65s.; medium yellow, 130s.; fine yellow, 155s. per cwt., spot. **CANDELLA** is steady at 60s. per cwt.; **SPERMACEIN,** 9½d. per lb., spot; **PARAFFIN,** 17s. 6d. to 27s. 6d. per cwt., as to melting point; **CERESINE,** 35s. to 30s. per cwt., as to colour and melting point; **BEES'**, bleached, discs, £6 17s. 6d.; slabs, £6 15s.; yellow refined, £5 17s. 6d.; yellow crude, £5 per cwt., spot.

Exports of beeswax from Tanganyika territory for the period January-June 1931 totalled 4,075 cwt., valued at £18,012, compared with 1,079 cwt. (£6,939) for the same period in 1930 and 3,651 cwt. (£26,628) in 1929. The total production for 1930 has already been exceeded by 302 cwt. Current prices are about 90s. per cwt., compared with 144s. in 1929.

Essential Oils

THE general upheaval in consequence of the temporary suspension of the application of the gold standard to our currency has affected practically every product in this market. Such a complete interruption of business and an entire lack of information or even idea of values, particularly for shipment, has never before been experienced, not excepting the period of the outbreak of war in 1914. Inquiry in all quarters, from shippers, importers, brokers and dealers elicited the same reply, "no quotations, we are off the market." In some instances shippers have cabled their representatives in this country to sell with the utmost caution from spot stocks, advising they are unable to furnish shipment quotations for the time being. Everyone concerned, including buyers, are waiting for the international monetary markets to straighten out and settle down to the new basis. For some months "bears" have controlled the market in the majority of products, and, as a result, imports have been well below normal, and mostly

taken into consumption. Stocks on the spot, with one or two notable and well-known exceptions, are rather limited. On the other hand, stocks in the hands of shippers and producers are undoubtedly abundant. At the moment it is reported that French and Italian shippers are not in a position either to quote or to consider bids. They will, no doubt, be anxious to do so immediately the international financial position clarifies, and it will be interesting to note how much, if at all, shippers will be prepared to discount any loss they incur on the new rates of exchange. If they wish to liquidate any considerable proportion of their abnormal stocks they will have to make some sacrifice. It may, of course, be contended that it is not possible to do other than increase shipment prices in accordance with the full amount of loss on exchange, as prices for many oils have been at extremely low levels for some considerable time, showing a very poor return to the producers. The spot market has been very subdued, business being limited to some unimportant sales, generally effected to meet the convenience of consumers. Spot holders are taking the precaution of waiting developments in the situation, and are not in any way forcing business, while buyers have taken up the same attitude. It is pleasing to note there has been no sign of anything approaching a ramp in prices. While the future rates of exchange will be the leading factor in the new level of values at which business will recommence, there is little doubt that the heavy stocks at origin will have a bearing, and should safeguard this market and consumers from anything in the nature of unwarranted advances in prices. Assuming that the pound sterling settles down in the region of five to ten per cent. under its former gold standard value, which is the general opinion, the actual increase in cost to consumers may well be slightly less in comparison. It may be possible in a week's time to record something approaching definite values on spot and for shipment. At the moment any attempt to define values, especially for shipment, would, in most instances, serve no useful purpose. The appreciation in the value of silver will, of course, further enhance the prices for anise (Star), cassia, etc. The following quotations are given with reserve. They may, however, serve as a guide to the position at the moment. Some shipment quotations are now beginning to trickle through, but they are all based on foreign currencies and are therefore of little or no use for the purpose of defining sterling values for forward positions.

ANISE (STAR).—Prices as at present quoted show a sharp advance; the market is firm but business is quiet: "Red Ship" in leads, 2s. 3d.; in tins, 2s. 2d.; in drums, 1s. 10½d. spot; for shipment, in leads, 2s. 2d.; in tins, 1s. 11½d.; in drums, no quotation, c.i.f.

BERGAMOT.—The position as regards the value of this and the other Sicilian oils is nominal at the moment. Shippers are unable to calculate their sales prices; spot is also nominal with any business generally based on an addition of about five to ten per cent. on last week's figures.

CASSIA.—Some spot offers are made at about 3s. 3d. per lb.

LEMON.—No quotations available for shipment from Sicily; the spot position is obscure, holders preferring to wait developments. Californian oil also nominal.

ORANGE.—The shipment market is nominal and spot is tentatively quoted at about ten per cent. advance on last week's figures.

PEPPERMINT.—Japanese dementholised on spot is to-day quoted firm at 4s. 6d.; there are no shipment offers on the market; re-sellers are offering October-December and January-March at 4s. 1d. and upwards. American oil is nominal on spot and no prices coming to hand for shipment, except one or two in American currency, which are practically useless.

The following arrivals have taken place from the countries indicated during the period September 17 to 23 inclusive:—Anise (Star), (H.-Kong) 35 cs.; bay (B.W.I.) 10 cs.; camphor (Jp.) 3 dms.; cassia (H.-Kong) 20 cs.; cinnamon (Ind.) 1 cs.; citronella (Java) 13 dms.; eucalyptus (Austl.) 20 cs.; 3 dms.; geranium (Fr.) 1 cs. 4 dms.; lavender (Fr.) 1cs.; lemon (It.) 60 cs.; lemongrass (Ind.) 2 dms.; orange (E. Africa) 30 cs.; patchouli (Seychelles) 1 cs.; peppermint (Fr.) 1 cs.; rose (Fr.) 1 cs.; rosemary (Ind.) 10 cs.; rosewood (Brazil) 3 dms.; sandalwood (Ind.) 40 cs.; various (Fr.) 7 cs. 3 dms., (Gy.) 5 cs., (It.) 74 cs.

Coal Tar Products, etc.

THERE is a much steadier tone in this market, although conditions are not directly affected by the present movements in sterling. Solvent naphthas, toluol and xylo are dearer. Pitch is meeting with a fair inquiry for shipment. **BENZOL.**—The market is fully steady at the advance,

business quite good: standard motor 90's, 1s. 3d. to 1s. 4d. per gallon, in tank wagons, ex works; pure, about 1s. 7d. per gallon. **CARBOLIC ACID CRYSTALS** (39° to 40° C.).—A limited business continues, with prices steadily maintained: 100 tons, 5d.; 50 tons, 5½d.; 20-25 tons, 5¼d.; 10 tons, 5½d.; five tons, 5½d.; two tons, 5½d.; one ton, 5½d. 10 cwt., 6d.; smaller lots, 6¼d. to 6½d. per lb., in drums with over-casks, carriage paid or f.o.b.; crude carbolic 60's, 1s. 3d. per gallon, naked at works. **CRESYLIC ACID.**—Except for high boiling acid, which is in limited supply and firm at about 2s. per gallon, the market is dull and inclined to be unsteady: pale, 98 to 100 per cent., 1s. 6½d.; dark, 95 per cent., 1s. 4d.; American duty-free acid, 1s. 7d. to 1s. 9d. per gallon, f.o.b. **CREOSOTE OIL.**—Business for export is slow: standard specification, about 5d. per gallon, f.o.b. in bulk quantities. **KEROSENE** is steady and in quiet demand: water-white, 11½d.; standard white, 10½d. per gallon, in barrels, ex wharf, London; in bulk, 3d. per gallon less. **MOTOR SPIRIT.**—The market is steady at the recent Budget advance. No. 1 spirit: England and Wales, and South Scotland, 1s. 3½d. per gallon; Belfast Zone, 1s. 4d.; rest of Northern Ireland, 1s. 4½d.; North Scotland, 1s. 4½d.; Dublin Zone, 11½d.; and rest of Irish Free State, 1s. 0½d. Aviation, 4d. more, and No. 3 2d. less in all cases. Two-gallon cans are 1½d. per gallon above the bulk prices, except in the Irish Free State and Northern Ireland, 2d. per gallon more. **NAPHTHALENE** remains dull: flakes, £11; balls, £11 per ton, in cases, ex wharf. **PITCH** is meeting with a fair seasonal demand for export, with medium soft about 50s. per ton, f.o.b. East Coast. **PYRIDINE** is steadier on a quiet market: 90 to 160, 3s. 3d. per gallon. **SOLVENT NAPHTHAS.**—The market has advanced and is very steady as quoted: 90 to 160, 1s. 3d. to 1s. 4d.; heavy, 90 to 190, 1s. 1½d. to 1s. 2d. per gallon, naked at works. **TOLUOL** is rather quiet, but prices are quoted higher: commercial 90's, 1s. 10d.; pure, 2s. per gallon, ex works, in bulk quantities. **XYLOL** shows an advance; market is quiet: commercial, 1s. 9d.; pure, 2s. per gallon, ex works, in bulk quantities.

London Drug Auctions

Commercial Sale Rooms,
Mincing Lane, E.C.3.
September 24.

ELEVEN brokers brought forward supplies, and the total offerings were of much the same dimensions as at previous auctions this year. In view of the unsettled international financial conditions there was a natural reluctance on the part of buyers to purchase more than immediate requirements, the principal consumers being the home druggists. The rise in values privately (about 15 per cent. on an average) was not reflected in the prices asked in auction to-day, but it is quite apparent that values will be higher later, e.g., the New York rate for sterling this morning was \$3.97—\$4.02, Paris fr. 100 to 102, Amsterdam gl. 9½—10, and Berlin rm. 17 to 18. Sumatra benzoin was very firm in auction. Buchu was easier and cardamoms, although neglected in auction, have been sold privately at firm prices. Honey was held for previous prices, but buyers prefer to look on at the moment. Ipocacuanha was unchanged. Cassia fistula and orange peel are scarce privately. Rhubarb was firm in view of the silver position. Tinnevely senna and pods were dearer. Sarsaparilla was neglected, and although importers' limits for beeswax had been reduced, there was no public buying.

AGAR AGAR.—A lot of eight bales Yokohama No. 1 and Kobe No. 1 offered and sold at from 3s. 9d. to 4s. per lb.

ALOES.—Three parcels Curaçao aggregating 113 cases offered, but nothing sold, although bids are to be put forward. For fair liver to part coarse mixed with capey 100s. was wanted; part capey, turning lively, 55s.; and black capey, 80s. to 90s. No good liver offered. Of Cape aloes three cases only offered at 36s. for ordinary dull seconds; of Zanzibar in skins, eight cases were shown, comprising fair hepatic part dark, for which 75s. was wanted, and common dark part drossy was obtainable at 55s. Of Socotrine in skins, two cases offered and held at 80s. to 75s. for part good hard liver and part dark and capey mixed.

BALSAM PERU.—Two cases of genuine of direct import from Acajutla were limited at 5s. per lb.

BENZON.—Sumatra firm with small sales, including 15 cases good fair almondy Sumatra seconds, well packed with small almonds at £7 7s. 6d. per cwt.; fair ditto were held at £6 17s. 6d. to £7; middling seconds at £6 5s. to £6 15s.; streaky thirds at 90s., and common thirds 75s. per cwt. Siam was in plentiful supply, 35 cases being offered. Fine loose medium to bold selected tear of good aroma was obtainable at from £30 to £31; medium ditto

£23; small to medium £25 to £26; pea and bean size £18 to £22; bright siftings, part blocky, £18; brown dust, part blocky, £9 2s. 6d. to £9 5s. per cwt.

BUCHU was slightly easier. Fair round green slightly stalky leaf sold at 11d. per lb. Slightly yellowish round, part stalky was obtainable at 10d., and bronzy long-ovals at from 7½d. to 8d. per lb.

CALUMBA.—Two lots totalling 179 bags were catalogued, of which 80 bags offered. Natural dark sorts were held at 15s. per cwt. and ordinary small sorts at 12s. 6d.

CARDAMOMS.—A fair amount of business has been done privately. The bulk of the offerings to-day were mostly Indian, and the best lots of the Ceylon-Mysore had been sold privately. Medium to bold long pale Ceylon-Mysore sold at 4s. 6d.; medium brownish, 1s. 6d., and small brownish, 1s. 3d.; pale brown seed 2s. 2d. A parcel of 78 cases and 3 bags Indian offered. Good medium to bold long palish (one case) had been sold privately; medium to bold were limited at 2s. 10d.; small round (5 cases) sold at 1s. 7d., and for Indian seed 2s. 3d. was paid.

CASCARILLA.—Lots aggregating 44 packages of mostly direct import were offered, but prices were not mentioned. The broker intimated sales privately of quill at 2s. 9d. and siftings at 1s. 6d. per lb.

CASSIA FISTULA.—A lot of 25 packages of common part wormy Java pod (all that offered), sold at 20s. per cwt. Sound pod is wanting privately.

CHAMOMILES.—A parcel of ten bales dull brownish Belgian 1931 crop were limited at 120s. per cwt. Privately fair white new crop Belgian are selling at 130s. and 1930 crop at 115s. per cwt.

CINCHONA.—The offerings included 88 bags Colombian mostly broken quill which were held for 6d. per lb. and eight bales of inferior dark, offered without reserve, sold at 2d. per lb. if pay charges. In another catalogue six bales of country-damaged broken quill were retired at 8d. per lb.

CUTTLE FISH BONE.—Altogether 132 packages were catalogued. Fair medium to bold pale East Indian sorts were obtainable at 10d. per lb., ordinary dullish ditto partly broken to middling, 6d. to 8d. per lb.

DRAGON'S BLOOD.—The offering comprised two cases of good, bright reboiled Singapore lump for which £40 per cwt. was wanted; apparently a bid of £37 was refused for a case. Middling to fair bright lump was held at from £23 to £25, and dull slab and lump at from £11 10s. to £14 per cwt. Zanzibar drop was limited at from 60s. to £5 15s. per cwt.

EPHEDRA.—Two bales Chinese herb were retired at 30s. per cwt.

ERGOT.—A lot of ten bags greyish sound Russian offered at 1s. 3d. per lb. Russian is very scarce privately.

EUCALYPTUS OIL.—Parcels aggregating eighty cases were offered, the asking price for B.P. 70 to 75 per cent., eucalyptol being from 11d. to 1s. per lb. Five cases of 70 per cent. sold at 11d. per lb.

GAMBOGE was in fair supply, 19 cases Siam being offered, and the limits for fair to good pipe of orange fracture, partly blocky, were from £15 to £17 per cwt.

GUAIACUM.—The offerings consisted of 33 packages. For fair glassy lump, 2s. per lb. was wanted; slightly drossy was obtainable at from 1s. 2d. to 1s. 3d., and ordinary dull part drossy at 1s. per lb.

GUM ACACIA.—For 25 bags fair bleached Kordofan 87s. 6d. per cwt. was wanted, and 22 sacks fair Aden sorts were limited at 35s. per cwt.

HONEY was in somewhat reduced supply, but a fair assortment offered, partly new crop. Buyers held off pending more settled financial conditions, and practically nothing changed in the auction, purchasers preferring to deal privately. Of Jamaica 525 packages offered and nothing sold, the price of cream set being 28s., and pale amber setting, 33s.; pale banana set, 26s. to 27s.; amber setting, 22s. to 25s.; and dark liquid amber, 22s.; 20 cases Australian dark amber set had been sold privately at 20s., and ten cases pale set Brazilian at 25s. per cwt. 61 cases pale to yellowish set Guatemala were taken out at 35s., and 61 cases amber setting Mexican at 25s. per cwt.

INSECT FLOWERS.—A lot of four bales of open Dalmatian flowers were retired at 80s. per cwt.

IPECACUANHA.—There has been no change in the prices asked privately. At auction, 13 bales Matto Grosso offered and held at 6s. per lb. for fair, mostly on the lean side. Four bales good Minas were limited at 5s. 6d., and six bales fair Manacs, part mouldy, were held for 6s. 3d. per lb.

KOLA.—Seventeen bags fair dried West Indian halves were offered, of which 11 had been sold privately. A bag of fair dried sold at 2d., and part mouldy and dark was obtainable at 1½d.; five bags West African were offered at 2½d.

MENTHOL.—A parcel of five cases of NKY brand, catalogued for auction, had been sold privately, the price not transpiring. The market closes with business in K/S at 14s. per lb. on the spot, and c.i.f. to arrive is cabled this morning at 13s. 9d., market being very firm.

MUSK SEED.—Five bags fair from East Africa were limited at 10d. per lb.

ORANGE PEEL.—Of the usual so-called Maltese machine cut, 12 cases ordinary dull offered and bought in at 7d. per lb. Good bright was not offered, and there is none to be had privately; dull strip is 5½d. to 6½d. per lb.

QUINCE SEED.—Three bags fair Cape were bought in at 4s. 6d. per lb. and two bags Cape part mouldy at 3s. 6d. per lb.

RHAPONTICA.—A parcel of 12 cases Chinese was bought in at 9d. per lb.

RHUBARB was firm in view of the rise in silver, and a few cases had been sold privately. Medium to bold round Shensi with three-quarters good pinky fracture was held at 4s. 9d.; a case of small round Shensi with three-quarters fair pinky fracture sold at 4s. 6d.; pickings were held at 3s. 6d. A bid of 7d. is to be made for 5 cases common rough round High-dried, the limit being 9d.; this description, with three-quarters grey and dark fracture was bought in at from 1s. to 1s. 2d. per lb. Four cases Canton were limited at from 2s. 3d. for pickings to 2s. 8d. to 2s. 9d. for small to medium round part stalky and part slightly wormy.

ROSE BUDS.—Five bales of Morocco were limited at 50s. per cwt.

SARSAPARILLA was quite neglected. Of genuine grey Jamaica, nineteen bales offered and held at from 1s. to 1s. 3d. per lb., as to quantity. The offering of native Jamaica was represented by 32 bales, but nothing sold, the limit being 1s. to 1s. 1d. per lb. For 12 bales Guayaquil character a bid of 3d. per lb. is to be submitted, and four bales Mexican were offered at 7d. per lb., at which business has been done privately.

SENNA.—Tinnevely leaf and pods are dearer. Good pods of the new crop were held for 6d., and other grades were limited at from 4d. to 5½d. per lb., as to colour. Six bales medium to bold greenish leaf were offered at 5d. to 5½d., and small to medium leaf at 3½d. to 4d. Of Alexandrian leaf and pods, 83 packages offered (mostly pods). Good pale green stout pods were held at 2s. 9d. to 3s., fair ditto 1s. 6d. to 1s. 8d., middling brownish 10d. to 1s., and flimsy and partly broken 4d. to 5d.

SOY.—Five casks Chinese (Seuloong Owl) were bought in at 2s. 2d. per gallon, duty paid.

STROPHANTHUS.—Two lots of five bags guaranteed 100 per cent. Kombe were offered and limited at 5s. 6d. per lb.

WAX, BEES' was in fair supply with good average qualities of East African better represented, and although practically nothing sold the importers' limits had been reduced. Of Jamaica, 11 packages offered and bought in at from £5 5s. to £5 10s. for brown to good pale red. Of Abyssinian 58 packages offered and partly bought in at 100s. for fair brown block. Of Madagascar, 19 bags were retired at 85s. for fair brown block. Forty packages Conakry were bought in at £5, and 20 packages Benguela at 95s. per cwt. Of bleached Calcutta 16 cases offered and held at from £6 to £6 5s. per cwt. for good white.

WAX CARNAUBA.—Ten bags fatty grey were limited at 65s., and ten bags of yellow at 170s. per cwt.

Next auction, November 26.

Trade-Mark Applications

(From "The Trade Marks Journal," September 2, 1931.)

"PO DE VAR"; for perfumery, etc. (48). By Société Anonyme Tokalon, 7 Rue Auber, Paris. 523,725.

"INTERPRÉTATION" and "EN SOURDINE"; for perfumery, etc. (48). By Parfumerie Houbigant, Société Anonyme, 19 Rue du Faubourg Saint-Honoré, Paris. 524,587/583.

"EPILSTICK"; for a depilatory (48). By E. Rimmel, Ltd., 1A Darnley Road, Hackney, London, E.9. 524,105.

"LAISSETTE"; for all goods (48). By C. S. Hartley, Cobden Buildings, Cort Street, Blackburn. 524,486.

Correspondence

Letters should be written on one side of the paper only. Correspondents may adopt an assumed name, but must in all cases furnish their real name and address to the Editor.

New Pharmacy Bill in Saorstát Éireann

SIR,—Many letters have appeared recently in the trade Press, some anonymous, criticising and putting forward suggestions for the new Pharmacy Bill. I sincerely welcome the somewhat belated interest being shown in the coming legislation, but I would like to reply to the points raised in the letter published over the names of seven members of the Society in the *C. & D.*, September 12 (p. 350).

Contraceptives.—The question of the sale of contraceptives was considered by the Council two years ago and definite steps were taken to have a clause dealing with this matter inserted in the Bill when the time was opportune.

General Meeting of Members of the Society.—It has always been the intention of the present Council that immediately the Pharmacy Bill is introduced and printed to call a general convention of all pharmacists, druggists, etc., in the Free State to frame amendments to any clause to which a majority of members object, but pharmacists must remember that the draft Bill was submitted to a general meeting to which every member of the Society was invited, held at the Metropole Restaurant, Dublin, in January 1928, and agreed to by them before being sent to the Government. Any amendment framed at the general meeting which will be called will have the full support of the Council.

Reciprocity.—When Mr. Parkes states: "Nobody wants reciprocity with Northern Ireland or Great Britain" I feel sure that he includes the members of the Council, but are we not now making laws for future generations? For fifty-six years we were unable to secure the advantage of our qualifications being accepted in America, Canada, South Africa, Australia, etc., because we had no powers to reciprocate. It is generally agreed that nearly every city, town and village in the Free State has more than enough pharmacies to ensure a decent livelihood for all. Why prevent any of our licentiates who may wish to go abroad from securing the advantage of his qualification? Surely a Council consisting of twenty-one chemists in business for themselves are not going to open the gates to a flood of competitors from our next-door neighbours? To put it concisely: We seek powers to grant reciprocity to any country provided it benefits Free State pharmacists, and members can rest assured that adequate safeguards against any abuse of these powers are included in the clause.

Corporations.—I and my colleagues are in complete agreement with the suggestions made by Mr. Bourke and also by the assistants re the nationality and permanent residence of directors and shareholders of companies, and we will use all our influence to get them passed into law.

Agricultural and Horticultural Poisons.—The Council have already asked for the powers suggested by Mr. Doyle, namely, that all sales of poisons be confined to persons on the registers of the Society.

Limitation of Apprentices.—Powers are being sought to enable the Council to deal with the full question of apprentices by Regulation, not by Statute. The reason is simple. If we make a definite law and find, as conditions change, any necessity for alteration it would require a new Act, whereas a Regulation can be adjusted to meet changing conditions by a resolution of the Council and the sanction of the Minister.

There are many more serious questions overlooked by these gentlemen, some eating into the very heart of pharmacy, noticeably the "wholesale trading" clause, compulsory registration of apprentices, abolition of Registered Druggist examination, revision of the poisons Schedules, etc., which had the constant, close and careful attention of the Council. I would like to assure every member and licentiate of the Society that

the Council is always alert, but very often it is not wise to show their hands, as, for instance, during the passage of the Veterinary Surgeons Bill through the Dail, when they were in constant attendance and were engaged in opposing the objectionable clauses, but did not want to appear publicly in opposition—the reason being obvious to every thinking man. Unfortunately, one of our members, who was not *au fait* with the work being done, rushed into print and brought us right into the limelight. If any member is interested he should read the records of the Dail debate after this letter appeared and see what chemists were called. I think he will then agree that our methods were the wiser. I do not believe in flamboyancy and showmanship. I prefer to trust to statesmanship.

Yours faithfully,

DENIS J. NUGENT,

President, Pharmaceutical Society of Ireland.

Dublin.

SIR,—In recent issues of our trade journal I have read a lot of correspondence on matters of interest to me as a chemist in business for my living. I notice that the contributors in the main remain anonymous, a few have appended their names, and a "Provisional Committee" has appended its title with some signatures. What I would like to know is: What is this so-called "Provisional Committee," who brought it into being, and who does it represent? In this age of revolutions we are familiar with provisional governments in the transitional periods; but so far I have not heard of any revolution in the pharmaceutical world. From my experience I think that our present "government" in Mount Street has done and is doing well, and in the coming tussle with the larger body in Merrion Street, I would prefer to trust to experience rather than misdirected enthusiasm, and not to "swop horses while crossing the stream."—Yours faithfully,

J. FITZPATRICK, M.P.S.I., P.C.

Dublin.

SIR,—In your issue of September 12 (p. 350) there is a letter quoting Mr. M. J. Parkes as stating, regarding reciprocity: "... Being a Northerner I know a little about conditions there. . . . The number of pharmacies is out of all proportion to the needs of the public, and in one month alone twenty-one apprentices were registered having passed equivalent examinations. The Dominions have enough of their own without strangers. The U.S.A. and other foreign countries are likewise situated. . . . Reciprocity is far too dangerous a matter to be left in the hands of any twenty-one members. . . ." Let us consider the facts of the case and these statements. Saorstát Éireann is practically on a par with Northern Ireland in the matter of surplus pharmacies and assistants. The Northern Council has had power to negotiate reciprocal arrangements for some time, and so far no injury has resulted to Northern pharmacists. According to Mr. Parkes, Northern pharmacy is overcrowded in all aspects and the same applies to Southern Ireland, only perhaps more so. Therefore there cannot be any prospect for invaders in the event of reciprocity being arranged. The position is the other way about in Northern Ireland if Mr. Parkes is correct, and the Northern Council did the absolutely correct thing in giving an opportunity to their surplus pharmacists and assistants to take advantage of any prospects there may be in any English-speaking or other country. (I don't believe they are all so full up as Mr. Parkes would have us believe.) In my opinion all this applies to Saorstát Éireann as well as Northern Ireland, and I would consider being a little bit adventurous in these matters a sign of health. I do not think there are good prospects of reciprocal arrangements between Ireland (North or South) and U.S.A.,

the Colonies, India, Africa, or any country unless the first step be reciprocity with Great Britain. I think the twenty-one members of Council are quite competent, are representative enough, are a large enough body, and can discuss or arrange reciprocity under the influence of Irish pharmacists. They are accessible and reasonable we know, and I am sure are quite as much aware of the reality of anything "dangerous" in this matter as are Mr. Parkes and his friends. With reference to corporations or company pharmacy, I would like to know how it is proposed to deal with existing companies? I would suggest that the case of an individual pharmacist (or a few) running a chain of pharmacies be prohibited if possible, and as far as possible; also that a doctor or apothecary, who is also a Ph.C., be disallowed practice of both professions at the same time.—Yours, etc.,

W. J. McKANE, M.P.S.I.

Ballina.

SIR,—Mr. O'Grady gets to the root of the trouble when he says "those immediately concerned are kept in ignorance of the draft proposals" (*C. & D.*, September 19, p. 374). It is for that very reason that our Committee has been meeting for the past six months—that the chemists of the Saorstát may have an opportunity of learning the contents of the proposed Bill, and discussing its various clauses. It is rather remarkable that those in authority have maintained a discreet silence in the matter until our deputation waited on the Council to express our views and objections. The president at Galway (*C. & D.*, September 19, p. 358) said: "When the Bill is printed the Council intends calling a meeting of every chemist and druggist, and, if they should find any serious objections in the Bill or its clauses, suitable amendments can be introduced." Certainly, this is a novel way of handling a situation of such importance to us all—approaching from the end rather than from the beginning! What exactly are the Council's objections to a free and open discussion on the Bill before the final draft is submitted to the Government? We cannot subscribe to Mr. Roche's view that there are sufficient safeguards in the "company clause" to prevent exploitation of pharmacy. This section, as at present drafted, offers companies unlimited scope for expansion to the detriment of every individual owner. We have been pressing for publication of the Bill and, if Mr. O'Grady and every other member of the craft stand behind us, the Council will be compelled to do the right thing.—Yours faithfully,

JOHN GLEESON, M.P.S.I.

Sandymount, Dublin.

Old National Health Insurance Scripts

SIR,—It happens often in my experience that a panel patient presents to the chemist two prescriptions for dispensing—one of the present date, and the other dated a week back. It may be, as the patient sometimes explains, that the earlier prescription had got mislaid; or it may be that he had decided first not to bother to have his prescription dispensed, and then, when he had his second prescription a week later, he decided that he may as well have both prescriptions dispensed: it would cost him the same. This procedure is to be deprecated, both on grounds of national policy, and in the interests of the patients concerned. The patient has a two weeks supply of medicine in the one week that remains before he next visits his doctor. Waste is caused at a time when the needs of national economy demand the elimination wherever possible of all waste. On the other hand, the patient may be tempted to take more of the medicine than would be good for him. And, in the case where, on different dates the doctor has prescribed different mixtures for the treatment of different conditions, the patient may make the mistake of taking, to the prejudice of his progress, the earlier prescribed mixture when he should be taking the one prescribed later. I therefore beg to suggest, Sir, that means be taken to impress on panel patients the necessity of having prescriptions dispensed within a reasonable time: say, within two days, after which prescriptions cannot be dispensed.

Yours faithfully,

MARTIN CONWAY.

Manchester.

Students' Finances

SIR,—It is *Mente's (C. & D.*, September 19, p. 374) duty as a citizen to give the Minister of Labour the names of those students who attend school and draw the dole at the same time. A student attending a full-time course at a college surely is not available for and "genuinely seeking work."—Yours faithfully,

DIGON TLAWD (21/9).

Chemists and the Gold Standard

SIR,—Much has been said in all sections of the Press about the perils of departure from the gold standard. It is remarkable, however, that so little has so far been shown us of the other side of the picture. It may be well, therefore, for chemists—and retailers generally—to consider the advantages which are likely to follow from inflation, especially as we are rightly warned to avoid any symptoms of panic. First, then, observe that the gold standard is itself to-day a shifting standard. Time was when the value of gold was for practical purposes fixed. With the export, and consequent scarcity, of gold its value has appreciated, and the old, and so far unsolved, problem has again presented itself: What is the value of gold and how shall we measure it? As the yard measure (for that is what gold is) expands so does the value shrink of all commodities measured against it. Hence the recent disastrous progressive fall in prices. Departure from the gold standard, then, in raising prices will (in this regard at least) benefit chemists and all shopkeepers. The probability is that the rise in value of their stocks will be in excess of the theoretical rise, due to inflation, because so much of pharmaceutical merchandise has a service value as well as a merely "goods" value. Secondly, it is a commonplace of the Money Theory—indeed, it is a law of exchange—that inflation stimulates trade. With increased currency the velocity of circulation is correspondingly increased, and with it the purchasing power of the community. To-day's difficulties arise in the following way: The world is "suffering" from over-production. On the one hand is a plentitude of goods (e.g., corn is being destroyed through lack of buyers in U.S.A.), and, on the other hand, is widespread poverty! A paradoxical position which requires for its rectification a change in our money system. Inflation will work the desired rectification and bring into contact the plentitude of commodities on the one hand and the would-be purchasers on the other. It has always seemed to me that, among shopkeepers, the chemist has been the hardest hit by the recent steady fall of prices. He has been peculiarly the victim of speculative underselling on the part of the multiple stores. Inflation will redress the grievance, react against the stores and bring the chemists' prices again into popular favour. True as it is that omelets cannot be made without breaking eggs and that lenders (e.g., banks, holders of war-stock and of some other gilt-edged securities) will suffer, it must at the same time be remembered that trade stimulation will increase the value of industrial shares and produce dividends where little or none have been forthcoming in recent months. Wholesale drug houses will surely benefit, especially as the devaluation of the pound will act in checking imports—to the advantage of all shareholders, who include a large number of retail chemists. Pharmacists, then, may well remain sanguine and look forward to improved conditions, and to brighter trade.

Yours truly,

R. CECIL OWEN.

Chester.

Dispensing Fees

SIR,—The extract from a paper by Barnard S. Proctor in the "*Retrospect of Fifty Years Ago*" (*C. & D.*, September 12, p. 352) lays down a principle which, I think, most pharmacists would subscribe to, namely, that the art of dispensing should be distinguished from mere trading operations. But a good deal has happened to pharmacy since that paper was written. Referring to the extract from the paper, it says that the public have no difficulty in appreciating the services

of the haircutter; they have not, for not only do they pay him the price he asks for his services (no goods are supplied in this case), but they give him a tip as well. I am not suggesting that customers should tip the chemist, but it is one of those curious defects which always seem to apply to our business, that the same customer will come straight from the hairdresser, where he has cheerfully paid both the fee and the tip, to the pharmacy where he complains about the price of a mixture which has been priced out plus a dispensing fee. To one customer who complained of the charge for a prescription I explained the method of costing, when he immediately exclaimed, "You have no right to charge for mixing as well as for the drugs." As I knew that in his calling he supplied nothing but knowledge and skill, I quietly pointed out that if skilled labour was not to be charged for, then following his own argument he had no right to any salary at all. I think probably it is because a chemist's business is, as a rule, so small that he gets such poor prices for the professional part of his work, or rather is compelled to accept them, for he cannot afford to lose any customer, and, therefore, cannot stand out for a professional charge against the competition he has to meet. If all chemists would agree to price out prescriptions and recipes by the *C. & D.* Price List and adhere to this pricing, not only our fees but our status would show considerable improvement.—Yours faithfully,

PLUSFEE (19/9).

Chemists and the Financial Crisis

SIR,—Now that the financial crisis has forced itself upon the "powers that be," chemists will ungrudgingly bear their share in the burden of economies and sacrifice. There are two points, however, upon which chemists should have further enlightenment. First, we have the assurance of the present Minister of Health (Mr. Chamberlain) that the present agreement will not be prejudicial towards the terms and conditions of the contract which will take place from January 1, 1933. There is no doubt whatever, that if Mr. Chamberlain is Minister of Health when such terms are under review, that this assurance is most reliable; but, what is the position if there is another Minister? The other point suggested by the R.P.U. is that, "unless 1932 proves unfavourable as regards epidemics," that we can expect at least tariff rates. This is really satisfactory, if it was not for that "unless." In view of the recent abnormally wet summer, and the lack of sunshine, it is very possible that the consequent lowered stamina of the public will result in a heavier call upon the dispensing service. If this gloomy prognostication is borne out, it seems likely that we shall fare very badly indeed.—Yours faithfully,

ARKAY (13/9).

Subscribers' Symposium

For interchange of opinion among "C. & D." readers and brief notes on business and practical topics.

Ergot

When I was a pupil in pharmacy about sixty years ago, I had to make up dozens of packets of ground ergot (done in a copper mill), each containing 30 gr. and wrapped first in white demy paper and then in tinfoil, and sent to a local doctor, who administered the ergot macerated in weak sherry.—H. G. (12/8).

Safety First

One hears so much of the danger of allowing young students to prepare small quantities of acetylene that any plan which has for its object the lessening of that danger is desirable. It will be found that if the carbide is enclosed in filter or blotting paper and dropped into diluted hydrogen chloride, the gas is evolved steadily and the mud in the generator is avoided; only black particles remain.—Abel Scholar (6/6).

Miscellaneous Inquiries

When samples are sent particulars should be supplied to us as to their origin, what they are, what they are used for, and how. We do not undertake to analyse and report upon proprietary articles nor to publish supposed formulas for them.

G. P. (11/9).—SYR. ACIDI CITRICI A.P.F.—The following is the formula for which you inquire:—

Citric acid	1/2 oz.
Solution of lemon	1/2 oz.
Distilled water	1 oz.
Syrup	to 16 oz.

Dissolve the citric acid in the distilled water, then add the other ingredients.

S. R. (17/78).—MEDICINAL PARAFFIN FOR MOTOR CAR ENGINES.—We have submitted this to a petroleum technologist, and he replies as follows:—Ordinary medicinal paraffin will be quite suitable for use as a lubricating oil for motor car engines only in cases where these require very thin oils, outstanding example being the old Ford T engine. The only objection to its use under these circumstances is its comparatively high cost. For the modern high speed engines the oil would be too thin, especially when the engine has become hot. Answers as regards the other points raised are as follows:—(1) Maintenance of viscosity of lubricating oil on a working temperature of the engine is the most important property of all. (2) Certain oils of asphaltic type tend to produce gum, which alters the viscosity. On the other hand, certain vegetable oils, particularly castor oil, retain viscosity at relatively high temperatures. Normal lubricating oils, including medicinal paraffin, are not decomposed under ordinary engine conditions, and the viscosity will be unchanged, after prolonged use, say up to 2,000 miles or even more; providing there is no leakage of fuel from the cylinder past the piston. This latter phenomenon is known as crank case dilution, and happens with cheap heavy fuels, especially in winter. (3) Non-carbonising properties are associated with lubricating oil composed of paraffinic hydrocarbons and such, as lubricating oils from Pennsylvania crude oil. Naphthenic hydrocarbons are also resistant, and Russian lubricating oils, including medicinal paraffin, are of this type. (4) Gummy tendencies are associated with oils obtained from asphaltic crudes as already mentioned above. (5) "Non-corrosive to engine bearings" is associated with freedom of lubricating oil from sulphur, and of course medicinal paraffin is the oil *par excellence* in this respect. Your conclusion that lubricating oil of the same type as medicinal paraffin would be ideal is correct, providing its viscosity was suitable. As a matter of fact many lower grade oils are being hydrogenated into paraffins, and thus becoming converted into oils of paraffinic type.

Retrospect of Fifty Years Ago

Reprinted from

"The Chemist and Druggist," September 15, 1881

A Curious Design

The medals struck in honour of the late International Medical Congress . . . were rather suggestive than beautiful. . . . Most chemists will readily recognise the idea as one with which Professor Holloway has made the world familiar. . . . We question whether the slight variations in the design can be altogether regarded as improvements. In Mr. Holloway's drawing the physician's staff of wisdom is shown, but it is modestly put in the background. In the medal it is ostentatiously and not very elegantly cuddled. We prefer, too, the attitude and the general appearance of the old gentleman in the Hollowayan picture to that in the design of his copyist, and the introduction of Death as the Æsculapian assistant in the latter is a piece of realism which we consider quite uncalled for. It was surely not necessary to sacrifice Art to Truth in this ruthless manner.



[Commenced C. & D., July 5, 1924]

Vitamin B Complex (cont.).—Brachycardia or slowing of the heart rate is suggested by Drury as a specific test for vitamin B complex. Deficiency causes reduction in heart rhythm of rats to some 200 below normal (which is 500-550 per minute). Ingestion or injection of concentrates of vitamin B complex rapidly changes abnormal conditions, the response being roughly proportionate to dosage. Apart from this action upon the autonomic nervous system there is no evidence that the vitamin B complex is responsible for any particular branch of animal metabolism. The discovery of water-soluble growth vitamins specific for pigeons and rats makes necessary a redetermination of the vitamin-B values of foodstuffs separating weight-maintenance factors (B_3 and B_4) and the anti-dermatitis potency from the more accurately known antineuritic activity. The physiological and pathological effects of shortage of vitamin-B factors are also indeterminate. Loss of appetite is without doubt the first noticeable result of insufficiency of vitamin B complex. The consequent diminution of food intake is accompanied by gastric and intestinal atony which culminates eventually in a general state of inanition. At this stage administration of yeast or cereal extracts containing the vitamin B complex causes a rapid improvement in functional activity of the stomach musculature and removal of intestinal stasis, in addition to the quickening of heart rate. Continued vitamin-B starvation eventually causes a marked fall in body temperature. This is followed by paralysis, which turns into a moribund condition, ending quickly in death unless vitamin B is administered.

SOURCES OF VITAMIN B COMPLEX.—Plants are able to synthesise vitamin B, and the supplies necessary for maintenance of human life are mainly obtained from the store laid down in cereal grains for the germinating seedling. The embryos of wheat, rice and maize are the richest sources of vitamin B. The vitamin-B content of foodstuffs appears capable of preservation for long periods when stored under dry conditions. Seedlings contain more vitamin B than the original seeds, and the germination of peas and lentils is suggested as a means of supplementing the borderline vitamin potency of the pulses forming the staple dietary in many parts of India. Yeast is the most important medicinal source of vitamin B complex, its store undoubtedly being derived from malted cereals and mashed grain. A yeast concentrate made by the method of Osborne and Wakeman is usually the first stage in making vitamin B concentrates, and its activity is that of the vitamin B complex. The method essentially consists in making water-insoluble the proteins and much of the extractable solids by boiling the washed yeast with 0.01-per-cent. acetic acid. Washed yeast is treated with two successive boilings with double and like weights of liquid, the united extracts after centrifuging being evaporated to four-tenths the original weight of moist yeast. This is precipitated by adding alcohol to 52-per-cent. strength, very little of the vitamins being thrown down. The filtrate and washings, after concentration to about 6 per cent. of the original bulk, are made up to 79-per-cent. alcohol. Most of the vitamins are contained in the precipitate. After reprecipitation twice by alcohol from a small volume of water, the vitamin concentrate is obtained upon drying in the form of a friable mass. This material is suitable for further treatment to remove unwanted factors. Yeast extract, autolysed yeast, dried yeast, pressed yeast, and washed yeast have been used in the past in biological testing as sources of vitamin B. The variation in constitution of the vitamin B com-

plex of these products has contributed to the uncertainty concerning the growth-promoting and disease-preventing properties of "water-soluble B." The relative values of foodstuffs as regards vitamin B complex (taking wheat germ as 100) are as follows:—

Wheat germ	100	Pressed yeast	60
Rice germ	200	Dried yeast	150
Maize germ	100	Yeast extract	100
Wheat bran	25	Egg yolk	50
Whole wheat	15	Ox liver	50

The foregoing relative values for vitamin B complex actually relate to the antineuritic vitamin B_1 . However, the therapeutic aspects of vitamin-B treatment will remain substantially unchanged, since the other three B vitamins are, with few exceptions, ordinarily associated with the B_1 factor. Yeast extract is commercially important as a source of vitamin B complex purchasable by the public.

AVITAMINOSIS OF VITAMIN B COMPLEX.—Beri-beri was formerly a scourge in the Philippine Islands, Japan, and other countries inhabited by rice-eating populations, following the introduction of polished rice (see vitamin B_1). The neuroses afflicting highly civilised communities are also probably attributable to lack of vitamin B complex, as a result of the undue consumption of white bread instead of whole-meal or brown bread. The embryo or germ of grain is especially rich in vitamin B, but a considerable amount is present in the aleurone layer which remains attached to the pericarp. In maize nearly all the B vitamins are localised in the embryo. Peas and lentils are somewhat poor sources of vitamin B. Pulse-eating nations are apt to have very slight reserves of vitamin B, and their vitality is decidedly low when a borderline condition of avitaminosis B prevails. The vitamin-B content of milk is variable, but cases of deficiency of vitamin B in infant feeding are rare. Malt extract contains vitamin B complex, and is a suitable base for enrichment with germ, bran or yeast extracts, but its natural content is poor. Growing animals require much more vitamin B than adults. The body tissues do not exhibit any marked capacity for storing vitamin B.

VITAMIN B_1 .—This term is now restricted to the antineuritic or antiberi-beri vitamin of Eijkman. The vitamin B concentrate of Peters first made in 1924 is used in animal tests as a source of vitamin B_1 . Peters' B_1 preparations are made from a yeast concentrate made by the method of Osborne and Wakeman (see vitamin B complex). Peters freed such a concentrate from much inactive material by successive precipitation with neutral lead acetate, acid mercuric sulphate, and barium sulphide. The vitamins in the filtrate (freed with sulphides and slightly acidified with acetic acid) were adsorbed upon a special vegetable charcoal, and recovered (after washing) by extraction with 50-per-cent. alcohol containing one part of concentrated hydrochloric acid per 100 parts of alcoholic menstruum. Peters has made concentrates of vitamin B_1 , which cure polyneuritis of pigeons in doses of 0.5 to 1 milligram per diem. Jansen has obtained crystals of "vitamin B" analysing $C_{12}H_{11}ON_2HCl$, which cure polyneuritis of pigeons with a daily dose of 0.008 mgm. However the crystals have also vitamin B_4 activity. Chick and Roscoe recently found that the vitamin B_1 is carried down in neutral solution along with the lead acetate precipitate. Avian polyneuritis has long been regarded as diagnostic of insufficiency of the antineuritic vitamin B_1 . Deprivation of this vitamin causes in pigeons a highly excited nervous condition marked by head retraction. This may be maintained for several weeks, but complete paralysis and death suddenly supervene. A curative dose of vitamin B_1 has the striking effect of restoring a helpless bird to normal gait and flight within a few hours. Prevention of head retraction is used as a curative index in assay of the antineuritic potency of foodstuffs. The paralytic symptoms are less marked in rats. Peripheral neuritis is the main symptom in human beri-beri, but the disease may take a "wet" oedematous form or be of a "dry" type, with excessive wasting of tissues. The antineuritic vitamin is thermolabile compared with the relatively thermostable B_2 factor. Thus yeast heated in an autoclave to 120° C. for five hours

The C.&D. Commercial Compendium

becomes devoid of antineuritic action, but will still relieve pellagrous conditions. Destruction by heat and (or) alkali of one or more specific factors is an important aid in differentiating the various B vitamins.

VITAMIN B₂.—Goldberger announced in 1925 that a "Factor P-P" is present in yeast, milk and fresh beef, which is possibly the curative agent for human pellagra. In 1926 proof was forthcoming that a pellagra-like condition is induced in rats by a vitamin-B-free diet, and that this is curable by yeast autoclaved at 120° C for five or six hours, at a pressure of 15 lb. Under these conditions the antineuritic vitamin B₁ is destroyed, whereas the antidermatitis vitamin B₂ is relatively heat resistant. Chick and Roscoe confirmed that autoclaved yeast promptly relieves rat pellagra, but that it has no effect upon paralytic symptoms. Experimental "black tongue" of dogs and human pellagra have also been shown to the same deficiency disease as rat pellagra. The pellagra-preventative or "P-P" factor has been renamed and numbered vitamin B₂. Deficiency of vitamin B₂ causes a characteristic abnormality of eye and skin in rats, which develops after the fifth or sixth week upon vitamin-B₂-free rations. The most constant feature is loss of hair (or dermatitis) on head and abdomen. A small daily ration of the thermostable vitamin B₂ in the form of autoclaved yeast slowly but surely cures. The skin lesions begin to heal after several days, and new hair appears in about two weeks. Yeast, either unheated or autoclaved, is rich in the heat-stable vitamin B₂. The antineuritic vitamin B₁ is removed by heating to 120° C for five hours, but heating in the presence of alkali is necessary to destroy rat-growth vitamin B₁. White of egg appears to be a comparatively pure source of vitamin B₂. Lean meat and milk are pellagra-preventive, through their content of vitamin B₂. Green leaves of watercress, lettuce, spinach and cabbage have a useful amount of vitamin B₂ (and B₁), which, based upon dry weight, is equal to one-quarter of that of yeast (dry weight). Cereals and pulses are relatively poor in the B₂ factor, compared with their antineuritic (vitamin B₁) activity. In cooking vegetables, about half of the vitamin B₁ and B₂ is lost in the water drained off.

VITAMIN B₃.—This vitamin is necessary for the weight maintenance of pigeons, yeast and whole wheat being typical sources. Williams and Waterer in 1927 used the fact that vitamin B₃ is the most heat-labile of the several B factors to prove its existence. Destruction of vitamin B₃ commences as low as 60° C. The uncertainty of the results of pigeon tests in the past is connected with vitamin-B₃ variation in yeast extracts, etc.

VITAMIN B₄.—Reader in 1929 proved that a fourth vitamin B is necessary for weight maintenance of rats. Yeast was deprived of vitamins B₁ and B₂ by controlled heating in the presence of an alkali, the more thermostable B₂ factor being conserved, when the product is used in artificial diets as a source of B vitamins, polyneuritis in rats results within three to four weeks. Addition of the B₄ factor will cure this condition, but it does not restore normal growth as represented by increase in weight. In addition, the animal's paws are swollen and red, whilst its gait is spastic. The latter inco-ordination is apparently specific for lack of vitamin B₄. There is no doubt that a plentitude of this growth vitamin is beneficial as regards the general well-being of animals as shown by brighter eyes and fur.

Vitamin C.—The production of scurvy as a result of lack of fresh vegetable foodstuffs has been known for over 200 years. Holst and Frölich proved the relationship in experiments extending from 1907 to 1912 by inducing scurvy in guinea-pigs and preventing this deficiency disease by including raw cabbage in the animals' rations. The general acceptance of the existence of an antiscorbutic vitamin was delayed until 1920 by the varying susceptibility of animals. Scurvy due to avitaminosis C develops in human beings in about 120 days. The principal symptoms are sore and bleeding gums, diarrhoea, oedema, and hæmorrhage. Experimental

scurvy in guinea-pigs fed upon diet free from vitamin C commences in about twenty days, after which a decline in weight sets in, and death ensues within forty days. The animals adopt typical scurvy positions to relieve swollen limbs and painful gums. The histological changes at the rib junction are diagnostic, varying from the slight disarrangement of incipient scurvy to complete breakdown at the junction of cartilage cells and bony trabeculae. The earliest recognisable symptom of scurvy is degeneration of pulp and dentine of the teeth. The nerve cells, blood vessels, and odontoblastic cells are converted into a fibroid mass without any trace of cellular organisation. The traditional use of lemon juice as an antiscorbutic has been verified, while the failure of lime juice (which, when fresh, has about one-quarter the vitamin-C potency of lemon juice) is due to loss of vitamin during extraction and storage.

Decitrated lemon juice is a convenient starting point in making concentrates of vitamin C. It is prepared by adding an excess of precipitated calcium carbonate to fresh lemon juice with constant stirring, followed by two volumes of alcohol. The filtrate and pressings after filtration are united and concentrated *in vacuo* to remove alcohol. Decitrated lemon juice concentrated to one-tenth of the original volume keeps well when acidified by the addition of 7 grams of citric acid per litre, and stored in the dark in air-free containers. The activity of decitrated lemon juice can be increased by fermentation with yeast (to remove sugar) in an atmosphere of carbon dioxide. Further purification of the antiscorbutic factor is effected by precipitation with neutral lead acetate, but this removes a reducing substance which exerts a protective action in regard to vitamin C. Vitamin C withstands boiling in slightly acid solution (pH 6.8) for two hours in the absence of air. Slight alkalinity is much more destructive, and inactivation (by oxidation) occurs rapidly at room temperature in the presence of air. Dialysis experiments indicate that the vitamin C molecule is slightly larger than that of hexose sugars. The vitamin-C activity of lemon juice has been concentrated into a fraction amounting to 0.23 milligram per c.c. of lemon juice.

The chemical nature of vitamin C remains indefinite, except that it dissolves readily in water and alcohol. All that is known about its origin is that it is formed during the germination of seeds. Lemon juice, orange juice, tomato juice and swede juice are used as antiscorbutics in infant feeding. Grape fruit and the foregoing fresh fruits are much favoured by adults. Decitrated lemon juice has been used for intensive treatment of scurvy. Californian concentrated orange juice is available commercially. Potatoes and milk are relatively poor in vitamin C, but form important supplements owing to the quantities usually consumed. Among vegetables, cabbage, kale, sprouts, spinach, watercress, dandelion leaves, endive and sorrel are highly antiscorbutic, but much of the vitamin C is destroyed when vegetables are cooked by boiling. Vitamin C does not appear to be stored in the body to any appreciable extent, and hence supplies must be continually renewed. Scurvy is rapidly cured by treatment with vitamin-C concentrates. Nevertheless, the health and dentition of industrial communities and poorer nations is affected by insufficiency of vitamin C in preserved foodstuffs and in cereals.

Vitamin D.—Mellanby in 1919 indicated that the causative factor of rickets was either "fat-soluble A," or a vitamin with a somewhat similar distribution to "fat-soluble A." McCollum in 1922 furnished explicit evidence of the existence of vitamin D in cod-liver oil as an entity distinct from vitamin A. The differentiation was effected by oxidation of vitamin A under conditions which left a proportion of the more resistant vitamin D. Its actual rôle in metabolic balance remains unknown, the various factors entering into bone formation comprising also concentrations of serum calcium and blood hexosephosphates and the presence of a specific esterase (enzyme) in bone-forming tissue.

(To be continued.)

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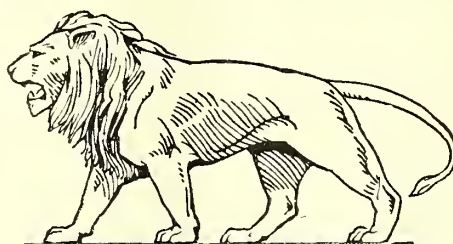
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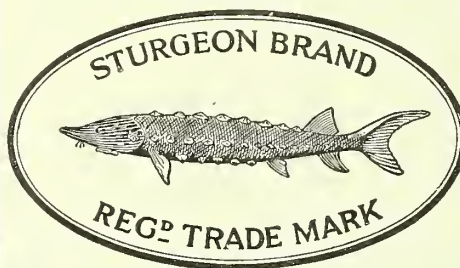
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on request from :—**THE ANGLO-FRENCH DRUG CO., LTD.**Telephone : Museum 4029. Telegrams : "Ampsalsvas, London." **238a Gray's Inn Road**
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SEXUAL NEURASTHENIA and
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**FOR
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RECONSTRUCTIVE.*For literature and other information apply to —*
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THE STEADY SELLER

Tablets per box 3d., 6d. and 1/-

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CONSTIPON**65 WEST REGENT STREET GLASGOW****ERGOAPIOL**
(Smith)Protective Mark
Patented in U.S. and
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(Smith) is identified by the letters "M. H. S." raised in the gelatin on the inside of each capsule—thus

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The New Shadforth Trade Policy

You take the Profit

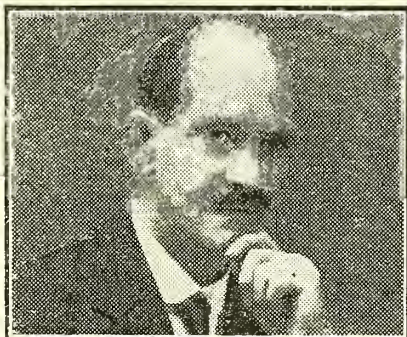
More than a million customers have been served through the post with Shadforth Prescriptions.

This is probably the most successful attempt at a chemist's mail order business on record.

This year we have served more customers through the post than in any previous year.

The New Shadforth Trade Policy aims at switching off the mail order trade to the retail chemist.

How far we succeed will depend on the retailer's co-operation. He can have our business for nothing—if he will accept it.



MR. WILLIAM SHADFORTH

*Pharmaceutical Chemist, and
Governing Director of the Shad-
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menced dispensing in 1884.*

*In one form or another, he has pro-
bably dispensed more prescriptions
than any living Pharmaceutist.*

We do the Work

From now onwards, every Shadforth Advertisement will state that any chemist can supply Shadforth Prescriptions at short notice.

**Our prices are pro-
tected and yield a
good profit.**

Let your customers know that you gladly

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They all prefer to deal with their local man if he is willing to oblige—it is cheaper for them—they save postage stamps.

*Send postcard for our Trade Terms
and open up a pleasant, permanent
and profitable business connection.*

Shadforth Prescription Service Ltd.

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For OVER 75 YEARS

Dr. J. Collis Browne's
CHLORODYNE

has maintained a

WORLD-WIDE REPUTATION

TO-DAY'S DEMAND BEING
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**ARE YOU GETTING
YOUR SHARE OF
THIS INCREASE ?**

Be sure you hold stocks
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remember that

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IS ONLY SOLD THROUGH CHEMISTS

SIZES 1/3, 3/-

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SOLE PROPRIETORS :

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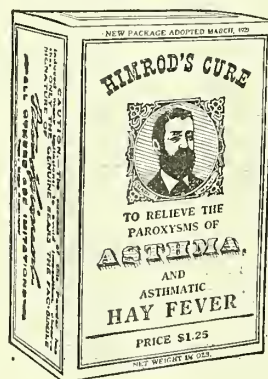
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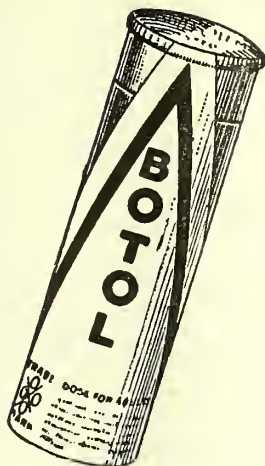
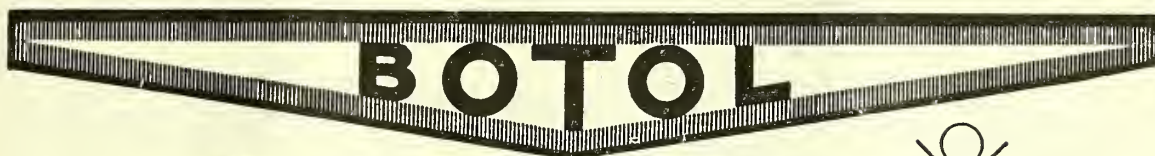
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Prepared by a new process which enables SOLID BROMOFORM to be combined with CODEINE

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IN TUBES OF TWENTY TABLETS

2/9 per tube 25/- per doz.

Also packings of 100 and 250 tablets, retailing at 11/6 and 27/6 respectively.

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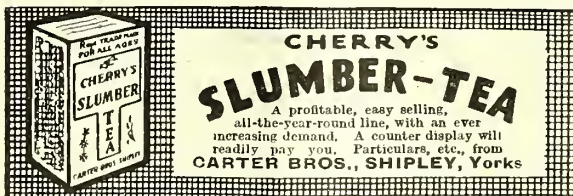
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**CHERRY'S
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Obtainable from the usual wholesalers or the makers

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per the
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On P.A.T.A. LIST

In 1/3, 3/-, 5/-, 12/- and 22/- boxes

Box's Pills have a special public of their own—many of whom have had to go considerable distances to obtain their favourite medicine, or to order from Plymouth, for lack of a local source of supply. Pharmacists are now co-operating in distribution of Box's Pills in increasing numbers, and healthy local demand is developing. Stock them and show them and you will sell them. Display outers and other attractive show material free on application.

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For FLIES and SUMMER PESTS

	WHOLESALE	RETAIL
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Large quantities are being sold through other trades. This should be **YOUR** line.

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RELIABLE

51/- Profit per Gross

50% Profit on Turnover

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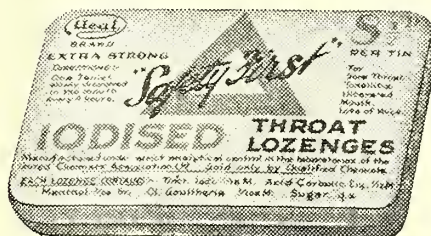
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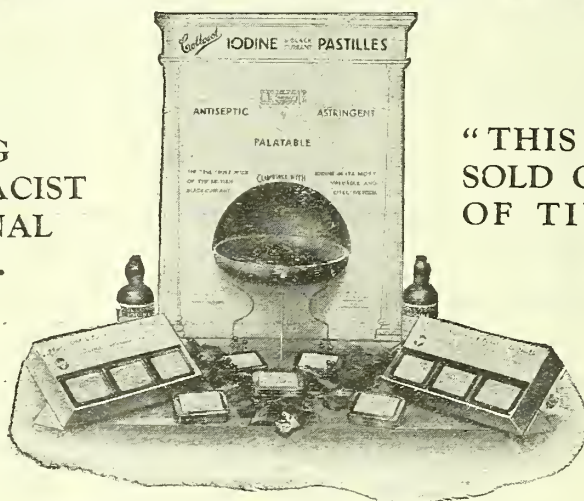
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"THIS DISPLAY HAS
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				<u>Minimum Retail Prices</u>	<u>Net Wholesale Prices</u>
				SIZES.	PRICE PER DOZEN
Clarke's Blood Mixture	3/- & 12/-	£1 : 7 : 0 & £5 : 8 : 0
" Salve	1/3, 3/- & 5/-	11/-, £1 : 7 : 0 & £2 : 4 : 6
" Aperient Pills	1/3, 3/-	11/-, £1 : 7 : 0
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Orders: Minimum quantity £16 : 4 : 0 value.

FREE CASES. Carriage paid upon orders of £100.

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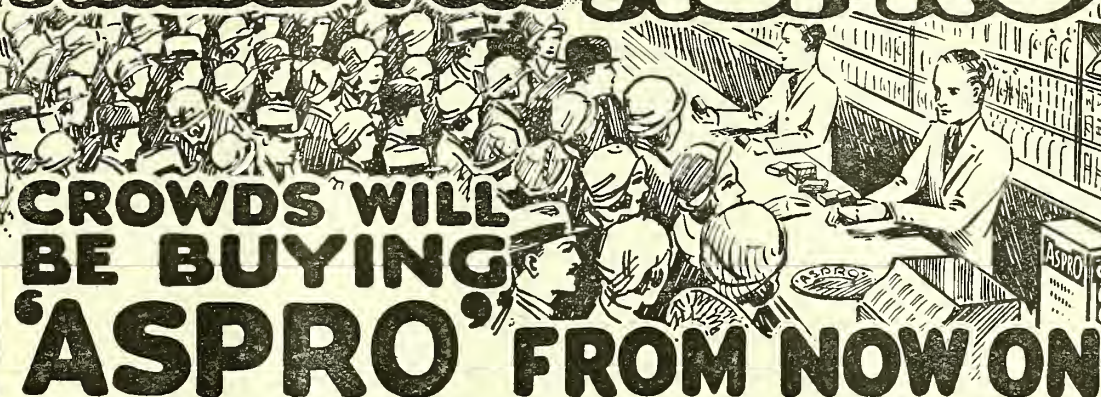
An attractive Showcard and Dummies supplied on application

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ADVERTISING MATTER ALWAYS AVAILABLE

We still have a supply of our summer window show, stickers, etc. We will gladly send you a supply on receipt of a postcard. We also have in course of preparation an entirely new window display for the coming autumn.

By the way, do you know that YOU CAN OBTAIN 17 PER CENT. MORE PROFIT BY BUYING 'ASPRO' ON BONUS TERMS?

'ASPRO' consists of the purest Acetyl Salicylic Acid that has ever been known to Medical Science, and its claims are based on its superiority.

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1/3 " 12/- "
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NATURAL MINERAL WATER

VICHY-CÉLESTINS

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Nature's Cure is the best

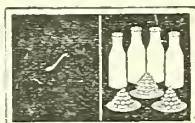


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ALL THE BUTTER AND
MILK ANY INDIVIDUAL
CAN EAT AND
DRINK IN A DAY

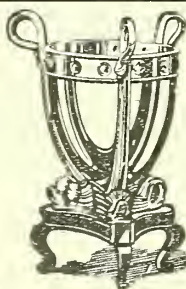


Norwegian Cod Liver Oil

National Committee for Promoting the Consumption of Norwegian Cod Liver Oil, Post Box 226, Bergen, Norway.

2

*In the last
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the sales of*



TOWN TALK
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3 Fold

Get your share of the
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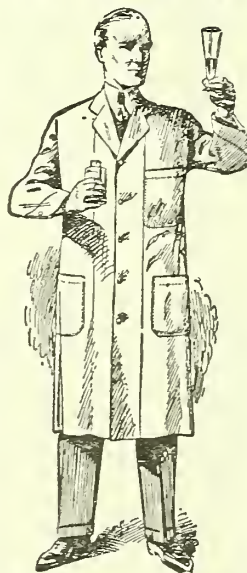
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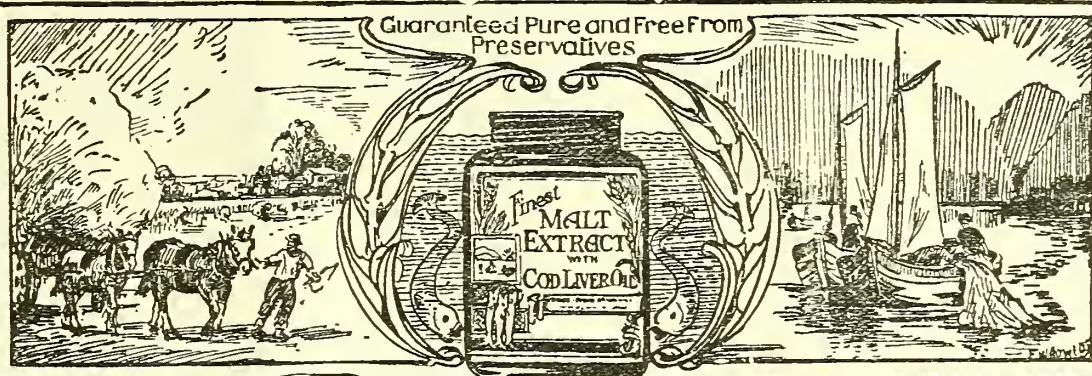
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A systematic comparison of the formulæ of thirty-one of the London hospitals, including the Children's Hospitals and the French Hospital. The formulæ are arranged under the headings of the various preparations so that an immediate comparison may be made between the prescriptions of the different institutions.

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Every retail purchaser of a Hot Water Bottle is a potential customer for a Cover for it.

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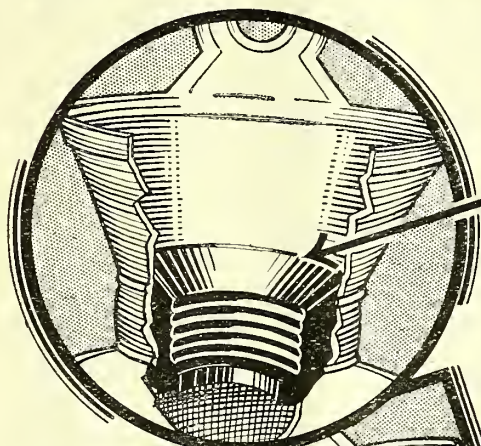
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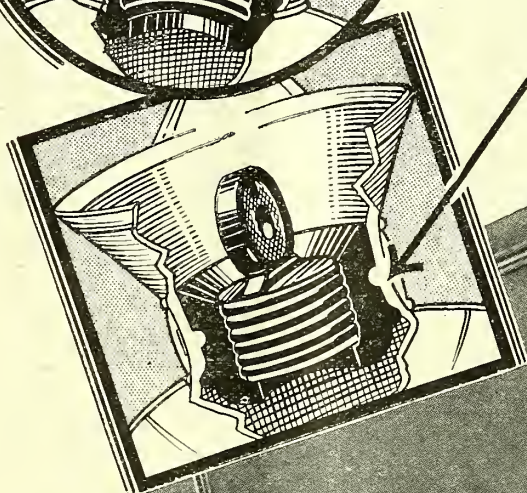
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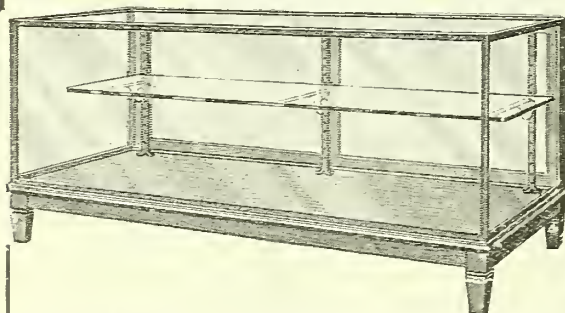
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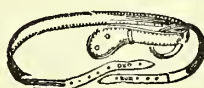
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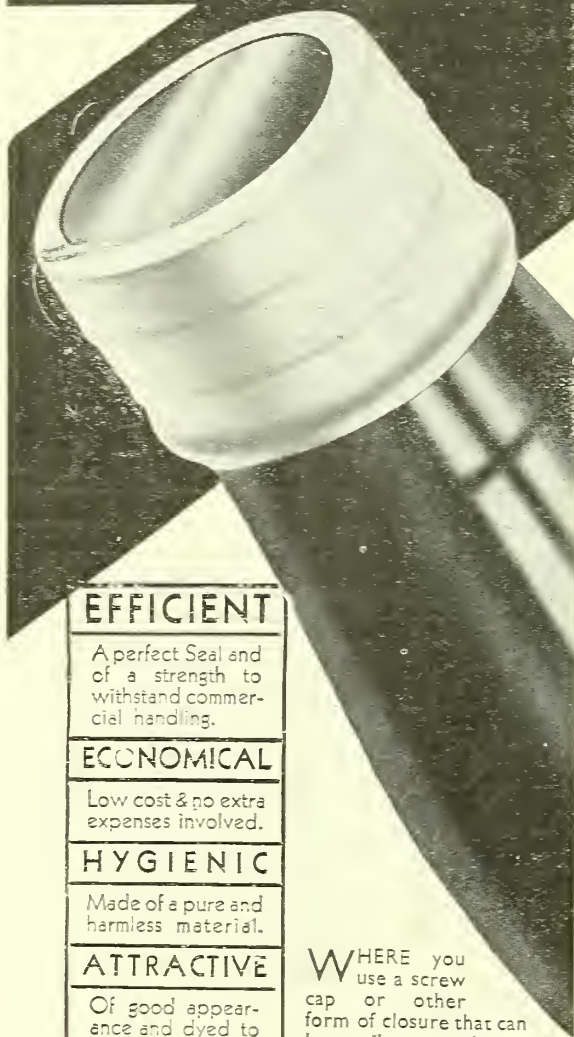
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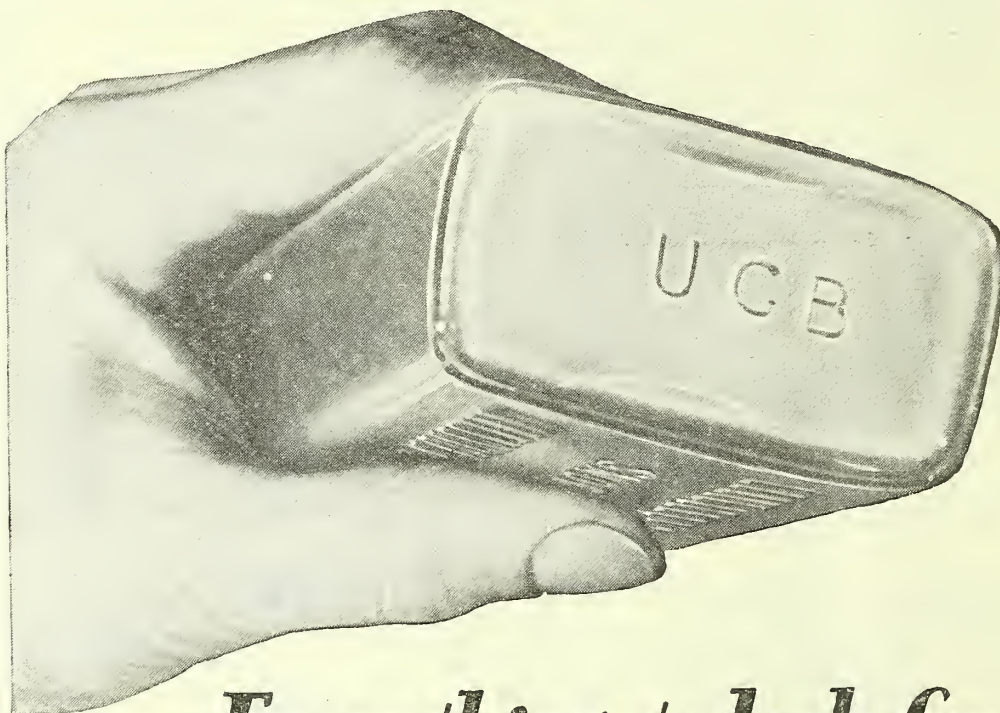
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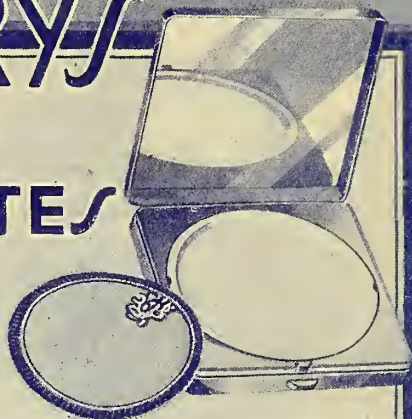
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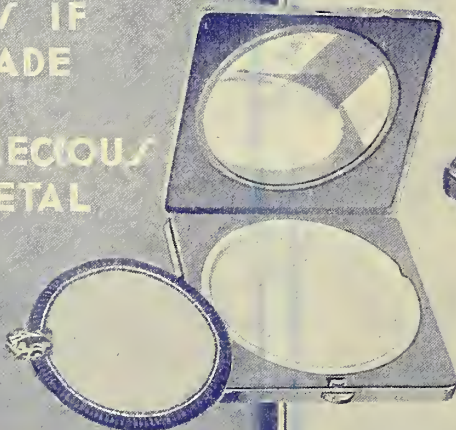
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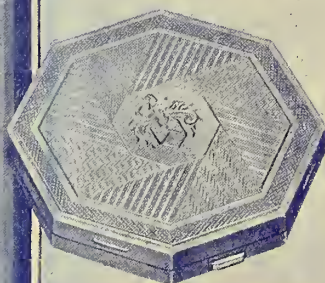
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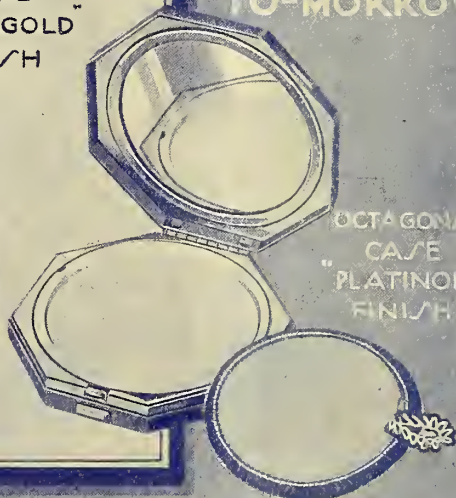
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(C13) LONDON—EAST.—Good family business doing £35 to £40 weekly; N.H.I. dispensing; Kodak agency; living accommodation (self-contained); stock and fixtures estimated at £750; further particulars on application.

(C14) LONDON—EAST.—Retail pharmacy, old-established, showing returns of approximately £90 weekly; premises comprise double-fronted shop and warehouse, together with good living accommodation; long lease at moderate rental; purchase price to include lump sum for lease and goodwill, stock and fixtures at valuation, or by agreement.

(C15) EASTERN COUNTY.—Old-established pharmacy for disposal on account of contemplated retirement; double-fronted premises, with excellent living accommodation; returns for 1930 exceed £2,000; chartered accountant's figures available; genuine proposition, capable of every investigation. (Visited and recommended.)

(C16) NOTTINGHAM.—Retail and dispensing business situated in working-class district; present returns approximately £14 weekly, but good scope for increase; low overhead charges; present net profits exceed £4 weekly; owner disposing on account of ill-health.

PRICING**YOUR****OWN****STOCK****RECORDS—**

Is heavy going if you sandwich it in between your other pharmacy duties or rob your already limited leisure. My organisation incorporates a trained staff who are constantly engaged in this work. Calculations are quickly and accurately performed by machines. By virtue of this I can undertake to price your stock records at a fee which makes it a definite waste of time for you to do it yourself.

WRITE for a QUOTATION TO-DAY
to

ERNEST J. GEORGE**CHEMISTS' VALUER****TUDOR HOUSE, WALSALL**

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BUSINESSES FOR DISPOSAL.

1.—SURREY.—Chemist's business in residential district, held on lease 7, 14, 20 years, at £98 per annum. Established 4 years. Returns £26 per week. Price asked—Lease and Goodwill, £350. Fixtures and fittings, £600. Stock approximately £400. Further particulars on application.

2.—LONDON, S.E.—Acid, Drug and Chemical Business for quick disposal. Premises held on weekly tenancy at 14s. per week, returns average £25 per week. Stock and fixtures estimated at £500. Offers invited.

3.—DEATH VACANCY.—DEVON.—Cash retail dispensing business recently opened. Reasonable lease will be granted or freehold may be acquired. Returns between £1,500 and £2,000, all cash. Good living accommodation. Applications for further particulars invited.

**Stocktaking Valuations: We undertake this work at
special rates and invite early applications.**

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CHEMISTS' VALUERS AND TRANSFER AGENTS,

41 Argyle Square, KING'S CROSS, W.C.1

(One minute from St. Pancras and King's Cross Stations.)

1.—SOUTH COAST.—High-class Retail and Dispensing Business; has been neglected; present returns £40 a week; scope for being doubled; splendid position; handsome pharmacy; fully stocked; valuation terms arranged.

2.—WEST MIDLANDS.—Well-established Light Retail in good market town; returns average £3,200; good profits; stock and fixtures worth £1,500; price £2,250.

3.—SOMERSET (Death Vacancy).—High-class Business, unopposed; returns £1,570; net profit £482; convenient house, garden, etc.; stock and fixtures valued £700; price, with Freehold, £1,600.

4.—HANTS (Nr. Bournemouth).—Sound light Retail, in growing district; returns £1,357, steadily increasing; modern pharmacy and house; large garden; ill-health sole cause of selling; price £950, or valuation terms arranged.

5.—BIRMINGHAM.—Sound Light Cash Retail in working-class district; returns nearly £1,300; net profit £349; rent covered by sub-let; corner shop in prominent position; owner leaving the trade; price £775, or £400 plus stock at valuation.

6.—EAST COAST.—Light Retail with Kodak Agency; some Optics; returns approximately £1,200, with plenty of scope; attractive modern fitted pharmacy; stands well; low rent; long lease; price £800.

7.—HERTS (Few Miles Out).—Light Family Retail, with Kodak Agency; returns last year over £1,500; net profit about £450; low rent on lease; good stock; price £850; recommended.

8.—SURREY (Banks of Thames).—Light Cash Retail, Photo and N.H.I.; returns £1,250; plenty of scope; good house and shop; low rent; on lease; owner retiring; price £450; stock at valuation.

9.—LONDON (Western Suburb).—Middle-class Cash Retail, in main road position; returns about £1,750; modern double-fronted shop, well fitted and stocked; price £1,250, or offer.

STOCKTAKING VALUATIONS.

We are prepared to undertake this work at special low rates and invite early applications; we are now booking dates for September onwards.

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ACCOUNTS audited. BALANCE SHEETS certified.

BUSINESSES (all districts) available. £300 to £4,000.

Enquiries invited.

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CHEMISTS' VALUER AND TRANSFER AGENT,

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BOLTON—Choice of two splendid propositions, £500/£750.

MANCHESTER.—Several chemists and drug stores, £150/£350.

WALLASEY—Returns £800 p.a., residential, good house, £500.

NORTH WALES—Returns £1,500 p.a., good house, scope here, £1,000.

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We desire particularly to draw the attention of Colonial and Foreign Subscribers to the fact that in cases where they require partners, agents or assistants, or wish to sell their businesses, an Advertisement in this Supplement, placed in every copy of "The Chemist and Druggist," should be the readiest means of helping them to attain their object. The tariff for such announcements is given under the appropriate headings in the Supplement. Instructions and remittances can be sent to us direct or through the advertisers' correspondents in this country.

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YOUR OPPORTUNITY

WELL-KNOWN Representative, now commencing as an agent in Manchester, requires several first-class advertised Proprietaries, Toilets, Sundries, etc., which must, however, be the products of leading firms only. Showroom and offices will be available; stock kept if necessary; own travelling staff and complete organisation; in short, a comprehensive sales service at half your present cost.

Territory covered from Birmingham and the Midlands to the North of Scotland, over the whole of which area a sound knowledge of the requirements of each district is available.

This is your opportunity to start a depot in the North. Reply, giving fullest details, to 192/808, Office of this Paper.

BUSINESSES FOR DISPOSAL.

BLACKPOOL SUBURB.—Pharmacy, recently established; main road position; splendid opportunity for qualified man; good living accommodation (nine rooms); increasing returns; Kodak; fittings, stock new; price £625; accept for quick sale £575; property £1,850 for quick transfer; mortgage obtainable; other details to bona-fide inquirers; no triflers; leaving the business and district for family reasons. 38/27, Office of this Paper.

BOURNEMOUTH.—Nice Retail and Dispensing, with Photographic, in first-class condition, with excellent opportunity for development; present takings just under £20 per week; good profits; lease; only opened 18 months; illness of family cause of sale; accept £650 for quick sale. 38/32, Office of this Paper.

BRADFORD.—Attractive Pharmacy in busy main road, with property; good business N.H.I., Photography, etc. Write 39/38, Office of this Paper.

CROMARTY.

DESIRABLE PROPERTY AND BUSINESS FOR SALE. FOR Sale by private bargain, the Dwelling-house and Chemist's Shop in High Street, Cromarty, belonging to the Trustees of the late Mr. Walter Johnstone, Chemist, Cromarty, together with the business of Chemist and Druggist carried on for many years by Mr. Johnstone, and latterly by his son, the late Mr. R. R. Johnstone. The business has been established for over 60 years, and is the only Chemist's Business in Cromarty. The Dwelling-house contains ten rooms. Both house and shop are in first-class repair. There is an excellent garden. For further particulars apply to Messrs. Middleton & Ross, Solicitors, Dingwall, with whom offers should be lodged not later than 15th October, 1931.

DEVON, SOUTH.—Retail Business for Sale; very old-established; owner retiring; easy ingoings for suitable tenant; takings average £100 per month; six-room house; main street; corner premises; Kodak Agency; suitable time for transfer can be arranged. Apply 39/8, Office of this Paper.

EAST COAST.—Light Retail Business; Photographic and N.H.I.; lock-up; main road; corner position; returns average £25 per week; rent and rates about £90 per year; new agreement; well fitted and stocked; fine opportunity for young qualified man; real genuine offer; £550, all at. 37/19, Office of this Paper.

HERTS (20 miles London).—Good-class Business for Sale; average turnover £25; Prescribing N.H.I. and Photographic (Kodak); well fitted; clean saleable stock; lock-up; moderate rent, on lease; to effect a speedy transfer a moderate price will be accepted. No agents. Write 30/19, Office of this Paper.

HERTS.—Light Cash Retail, in growing district; no opposition; modern premises, with garage room; water, electricity and gas; price £1,275. Full particulars, 38/40, Office of this Paper.

LIVERPOOL.—Old-established Business, in thickly populated working-class district (one change in 60 years), with excellent house attached, which is freehold; takings average £1,000 per annum; could be doubled with the addition of N.H.I., D. & P., and Optics; splendid opportunities for energetic Chemist; the house contains one large sitting-room, three bedrooms, kitchen, bath, hot and cold water, tiled hearths, tiled sinks, gas fires, large yard, with shed for motor-bike, electric light throughout; rates £16 18s. 3d. per annum; house could be let off at 20s. per week; price £1,125, including the freehold property. Apply, Mauchlins Cash Pharmacy, 30 Windsor Street, Liverpool.

LONDON, E.—Old-established Branch Pharmacy; takings £28 weekly; N.H.I. scripts average 12,000 per annum; rent £55; 14 years' lease; excellent opening for Dentist; price £550; certified accounts; no agents, no triflers. 32/8, Office of this Paper.

LONDON, N.W.—Drug Stores in densely populated district; £ returns £20 per week; rent £3 per week, inclusive, at long lease; well stocked and fitted; double-fronted lock-up, in main road; large numbers of N.H.I. turned away; owner anxious to dispose of at once; offers wanted. 38/18, Office of this Paper.

NORTH LONDON Retail Business in residential and growing locality; well-fitted shop; lease 20 years unexpired at £160 per annum; flat above presently sub-let; low ingoings; splendid opening for capable Chemist; fine scope for extension. Full particulars from Watson Jardine & Co., Accountants, 8 Sherwood Road, Wimbledon, S.W.19.

NOTTINGHAM SUBURB.—General Family and Dispensing; Kodak, N.H.I.; commanding position; growing district; fine opportunity for man with capital and initiative; sound reasons for disposal; price asked £800. Full particulars from 38/25, Office of this Paper.

SOUTHPORT.—Light Retail and Dispensing, with Kodak Agency; doing over £14 weekly under manager; scope for great development; suit single man or lady; lock-up shop; rent 30s. week, including rates; price £400, or valuation. Full particulars and every facility for investigation to bona-fide purchasers only. 38/15, Office of this Paper.

TYNESIDE.—Established Retail Business, with good N.H.I. connection; returns, under management, approximately £1,400; can be increased considerably with proprietor's personal attention; owner must sell for private reasons, and for a quick transaction will accept valuation of stock and fixtures. 192/816, Office of this Paper.

WEST RIDING.—Retail Business for Sale; lock-up shop; easily run; pleasant suburb; net profit £502 (income tax figures), increasing gradually; proprietor purchased larger business; accept £475 for quick sale. 36/29, Office of this Paper.

YORKSHIRE.—Family and Agricultural Business in good market town; old established; long lease; large turnover at good prices; price £4,200. Particulars to prospective buyers only. 36/27, Office of this Paper.

A REAL OPPORTUNITY.—Business for disposal in town in Derbyshire; main road; corner shop, with living accommodation; unopposed; all cash trade; N.H.I. and Kodak Agency; rent £50, inclusive; death sole reason for disposal; inquiries treated strictly confidential. 31/14, Office of this Paper.

A VERY old-established Retail and Dispensing Business, with Wine Licence and good N.H.I. connection (1,000 per month) and important Speciality; situate in busy West Riding town; returns last 3 years average over £5,000 per annum (under management); only genuine inquiries from responsible persons with capital to take over such a business will be considered; lease on premises; no agents. 26/14, Office of this Paper.

DRUG Stores, doing £8 weekly, with Post Office attached bringing in £1 weekly and increasing; well fitted and stocked; returns would double under qualified man; property belongs owner and would sell at reasonable figure (£550); price asked for business £350 for quick sale. Apply 37/360, Office of this Paper.

FOR immediate disposal through ill-health, much-neglected Business in busy main thoroughfare of important London suburban town; principals only; small incoming; nicely fitted, with excellent windows and well stocked; about £250 required. Apply for particulars, by letter only, to "Chemist," 53 Lancaster Road, Stroud Green, N.4.

GENUINE opportunity, particularly for Multiple shop concerns, occurs for advantageous purchase of Business, main road, Central London, position, with living accommodation; long lease at cheap rental; present turnover approximates £2,000 per annum at exceptional percentage profit; chartered accountants' figures; real possibility of greatly increased turnover in go-ahead hands; illness sole reason for disposal; first reasonable offer accepted. P.C.B. 6/15, Office of this Paper.

HIGH-CLASS Business, Dispensing, Photographic (Kodak), Prescribing and N.H.I.; excellently appointed pharmacy; modern shop front; average turnover £2,800 per annum; stock, fixtures and goodwill all at £1,850, or stock by valuation; Freehold for Sale or Let on lease; busy thoroughfare; Eastern Counties. Full particulars, 36/12, Office of this Paper.

OLD-ESTABLISHED Business, doing a turnover of nearly £4,000 per annum; gross profit 41 per cent.; double-fronted shop; long and valuable lease. Further details will be given to principals on applying to 38/24, Office of this Paper.

TO LET.—Chemist Business (under management) in growing residential Cardiff suburb, main thoroughfare; reasonable rental; stock, fixtures and fittings at valuation; Kodak, N.H.I.; excellent modern business and living accommodation; garage; sale considered; mortgage obtainable. 38/35, Office of this Paper.

UNIQUE OPPORTUNITY.—The owner of an old-established City Pharmacy in the North is open to negotiate the sale of his business owing to contemplated retirement; the hours of business are from 9 to 7, early closing day, Saturday; returns exceed £200 weekly; net profits are in the region of £1,500 per annum; the bulk of the trade carried out is with city business men, stockbrokers, etc., and the business offers unique and exceptional opportunities under the right type of proprietor; all correspondence treated in strict confidence. 192/815, Office of this Paper.

BUSINESSES WANTED.

LONDON OR HOME COUNTIES.—Pharmacist, with ready cash available, requires sound Retail Business with turnover up to £5,000; must be capable of investigation and returns should not be less than £3,000 per annum; would consider Partnership with view to succession later if desired. All replies treated in strict confidence. 36/5, Office of this Paper.

LONDON OR HOME COUNTIES.—Sound Retail Business required; preferably Cash trade; annual returns £2,000/£5,000, but smaller turnover considered where scope for increase exists; capital available for suitable concern; all particulars treated in strict confidence. 192/817, Office of this Paper.

MESRS. ORRIDGE & CO. are in a position to dispose of several sound concerns in London or the South; turnover required £2,000 to £10,000; cash waiting; prospective purchasers should apply at 56 Ludgate Hill without delay. Telephone GRy 2283.

SOUND Businesses required, all areas, particularly those with turnovers upwards of £2,000 per annum; all likely propositions receive prompt and careful attention; prospective purchasers introduced privately, and without delay. Write in confidence to Ernest J. George, Tudor House, Walsall. Telephone 3774.

WEST RIDING OF YORKSHIRE.—Pharmacist, with capital up to £5,000, requires sound Retail Business; any likely proposition considered, but must be capable of investigation; all replies treated in strict confidence; would be prepared to consider a partnership with a view to succession later. 192/818, Office of this Paper.

PREMISES TO LET.

HUNTS.—To Let from October 1, 1931, Lock-up Shop in main street, Chemist and Druggist; present tenant not renewing lease; splendid opening; rent reasonable. Apply 36/24, Office of this Paper.

TO Let or Sell, new Shop, with modern living accommodation, healthy and beautiful district; Chemist's shop required; rent 30s. per week, plus rates; splendid opening for beginner. Apply Knowles, 24 Knowles Road, St. Annes-on-the-Sea.

TO Let on agreement, option of lease, new corner Shop, front fitted, situated on main road, centre of populated area and fast developing estates and small shopping centre; splendid opening for Chemist; no opposition; excellent living accommodation; low rent. Apply Cartwright & Son, Estate Agents, facing Southern Station, Hounslow.

PREMISES FOR SALE.

GOOD opening for Chemist; shopping centre; new district near London; good shop and maisonette; no opposition; last shop available. Write "Z," Smiths' Library, Slough.

IPSWICH, SUFFOLK.—For Sale, Freehold, House for conversion into shop; ideal position Chemists; no opposition; main road; tram route; second house from hotel; near other shops; frontage 25 ft., depth 200 ft.; side entrance; three bedrooms, two sitting, bath, nice garden, fruit trees; £675; mortgage arranged. Apply Inder, 320 Nacton Road, Ipswich.

NOTTS.—Shop for Sale or to Let on new estate near Worksop; excellent opportunity for Chemist; nearest drug store at present over one mile; room for Surgery and N.H.I., which could be obtained; nice house attached, and in pleasant district. Full particulars from G. Riches, Woodlands, near Doncaster.

PARTNERSHIPS.

PARTNERSHIP.—Wanted, a reliable, experienced, qualified man as Partner for a neglected branch with good possibilities; one who will run the business according to his own ideas; capital required about £400. 37/24, Office of this Paper.

PARTNER, "Minor" required for up-to-date modern Pharmacy, with unlimited scope for increase; pleasant locality; good-class family trade; splendid opportunity for small man seeking square deal and willing to take small salary to commence; references given and requested; all returns fifty-fifty; minimum capital £150. 38/39, Office of this Paper.

SALE BY AUCTION.

47 Spring Grove Road, Lampton, Hounslow (close to Hounslow East D.R. Station).

P. CHASE GARDENER & CO. will Sell by Auction, on the premises as above, on Tuesday, September 29, 1931, at 11 a.m. precisely, the entire Stock, Fittings and Fixtures of a Dispensing Chemist, also the excellent Household Furniture and Effects. On view day prior and morning of Sale. Catalogues may be obtained of the Auctioneers at their offices, 269 High Street, Hounslow, and at Hanwell, Southall and Osterley Park. Phone: Hounslow 0070.

TENDERS INVITED.

THE DIRECTOR-GENERAL, India Store Department, Belvedere Road, Lambeth, S.E.1, invites Tenders for:—70 tons Caustic Soda (Sample required with Tender). Tenders due October 9, 1931. Forms of Tender obtainable from the above at a fee (which will not be returned) of 5s.

APPRENTICES.

APPRENTICE required for high-class Dispensing Business; time for study allowed. W. Browne & Co., 509 Finchley Road, Hampstead, N.W.3.

CAPABLE Dispenser, used to N.H.I., fair knowledge of shop routine, requires 12 months' Apprenticeship in pharmacy. P.C.B. 6/11, Office of this Paper.

FOSTER & DALLAS, 1 Lavender Hill, S.W.11, require an Apprentice; unique opportunity for youth wanting good Dispensing and Counter experience; no premium; pocket money first year 10s. per week, second year 15s. per week.

SITUATIONS OPEN.

RETAIL (HOME).

BIRMINGHAM.—Manager; qualified; capable and experienced; not under 30; married preferred. Apply, with full particulars, to Managing Director, Hedges (Chemists), Ltd., 10/12 Dale End, Birmingham.

LIVERPOOL.—Qualified Manager, permanency, young, capable, energetic, trustworthy, for working-class trade with busy N.H.I.; salary £3 15s. weekly. State age, with references and photo, and stamped addressed envelope for its return. 38/31, Office of this Paper.

LIVERPOOL.—Experienced, unqualified Assistant wanted. Please send full particulars, including salary required, to R. & J. Herman, Pharmacists, Aintree, Liverpool.

LONDON, W.—Wanted, an energetic, trustworthy, unqualified Assistant, with all-round experience, married, to live on premises, working-class neighbourhood. Apply, with full particulars, age, height, and salary required, and when disengaged. Lloyd Davies, Chemist, 63 Golborne Road, North Kensington.

MIDLANDS.—Qualified lady Assistant, M.P.S., accurate Dispenser and hard worker, for busy N.H.I. business in large town. Full particulars regarding previous experience, salary, and when free to 192/813, Office of this Paper.

MIDLANDS.—Young, qualified Manageress required for small branch shop about middle of October. Please forward particulars of height, salary required, experience, references, and photograph if possible (to be returned) to L. H. Lester, Chemist, Market Place, Nuneaton.

PETERBOROUGH Friendly Societies' Medical Institute require the services of a lady Pharmacist as Dispenser; two Surgeries daily. Sundays and Wednesday evenings excepted. Applications, with copies of references only, stating salary required, to C. Edward Cox, 15 New Road, Peterborough.

ASSISTANT, unqualified, wanted for good-class country business; must be loyal, industrious, accustomed to dress Windows, and clean and tidy in Dispensing and Stock-keeping. Send full particulars of education, experience, and wages required. 36/33, Office of this Paper.

GENTLEMAN wanted to assist in three days' stocktaking. Smithsons, 11 Preston Road, Brighton.

IMPROVER, with good apprenticeship, wanted early October. Apply, by letter only, stating age, experience, salary required, and when at liberty, to H. G. Green, 182 Upper Richmond Road, East Sheen, S.W.14.

JUNIOR Assistant required; male; unqualified; outdoors; good Window-dresser essential; good general business experience. Please state the usual full particulars in first letter and include photograph. If convenient would like an interview. John, Chemist, Cowley Road, Unbridge, Middlesex.

JUNIOR, unqualified, gentleman, for Light Retail and Dispensing. Send full particulars, with photo, salary required, etc., in first letter to Parkin, Chemist, Stevenage, Herts.

JUNIOR Assistant required for good-class Retail and Dispensing business; must be accurate Dispenser, good Counterman, and of smart appearance. Apply, with full particulars; interview if possible. Beech, Chemist, Leatherhead, Surrey.

LADY Counter Assistant with good experience and one with some knowledge of Book-keeping. State experience, age, height, salary required. If no reply in 7 days consider services not required. Savage & Co., Pharmaceutical Chemists, Brighton.

MANAGER, City Pharmacy; must be smart and good Salesman; progressive salary; permanency for right man. Applications, stating age; salary required, previous experience, and copies of testimonials, to 37/29, Office of this Paper.

PART-TIME.—Unqualified Assistant from 6 p.m.-9 p.m. daily; used to N.H.I.; no Fridays; East End. Age, wages, experience, references, all in first letter. P.C.B. 6/14, Office of this Paper.

QUALIFIED lady Assistant required for shop in large Northern city, with large experience in Toilets. Give details of age, experience, salary required, and when at liberty to 192/814, Office of this Paper.

WANTED, smart Junior, unqualified, for good-class business in outer London suburb, S.W. district. P.C.B. 5/27, Office of this Paper.

WILLIAM ADAMS & SON, Pharmaceutical Chemists, Shrewsbury, have a vacancy for a Junior Assistant; experience in a good-class business with a fair knowledge of Dispensing an essential. Applicants are requested to give full particulars of their experience, etc., and the salary required.

WHOLESALE.

A FIRM of Wholesale and Manufacturing Chemists is open to take a young M.P.S. to take charge of Dangerous Drugs and assist in the manufacture of Concentrated Mixtures; must be prepared to invest £250 in company. 38/38, Office of this Paper.

A LEADING firm of Manufacturing Chemists requires the services of an experienced Representative; preference given to one already holding a connection with Doctors, Chemists and Veterinary Surgeons in the Midland Counties; good opportunity for first-class man. Apply, giving full particulars of age, experience and salary required, with photograph. 39/17, Office of this Paper.

LIVERPOOL AND DISTRICT.—Traveller required to represent a Manchester Druggist Sundries House; must have practical experience and sound connection. Give full particulars, age, remuneration, and references. Resident on the ground preferred. Apply 37/35, Office of this Paper.

REPRESENTATIVES required, with first-class connection amongst Chemists, Hairdressers, etc., to carry Toilet Preparation as side line on commission basis. 36/37, Office of this Paper.

REPRESENTATIVES wanted in England and North Wales by firm established over 40 years to offer finest quality Medicated Lozenges, Pastilles, Tablets, Wafers, Pellets, Cachous, etc., amongst Chemists and Druggists; very profitable commission basis. State full particulars and ground covered; only men with good connections need apply. 39/4, Office of this Paper.

REPRESENTATIVES with Chemists, Patent Medicine Vendors and Stores connections required for Southern and South-Eastern Counties, including coastal districts, to carry an extensively advertised line; liberal commission; interviews in London. 38/14, Office of this Paper.

REQUIRED, Compounder of Floral Ottos, Soap Perfumes, and Blending experience for other trades, with possible knowledge of overseas requirements; age not over 35. Write full particulars of experience, salary required, to "Compounds," c/o Abbotts, Ltd., 32 Eastcheap, London, E.C.3.

SALES Organiser wanted by old-established Chemical Company (Midlands), now commencing to operate two new Perfumery and Toilettry Companies; bulk and exceptionally well-designed superior quality packed lines for Chemists, Hairdressers, Stores, etc.; applicants must be thoroughly acquainted with trade requirements and present-day competitive prices, be competent all-round adviser, as well as be in close touch with above buyers and able to influence sale accordingly; remuneration will be by results, and a super salesman will receive substantial appreciation with permanency and higher prospects. State fullest particulars of experience (in strict confidence), age and salary required to 39/40, Office of this Paper.

TO gentlemen having sound connection with Wholesale and Retail Chemists. The M.M.T.P. Co. are widening the scope of their activities (for their popular pack in carton) and offer a profitable proposition to commission Salesmen in centres where not already represented. Write for terms of this daily commodity, with unlimited prospects; give particulars, ground covered, lines carried. The Miss Muffet Toilet Paper Co., 1 Julian Road, West Bridgford, Nottingham.

TRAVELLERS calling on Chemists, Merchants and Shippers wishing to handle profitable side line apply 192/812, Office of this Paper.

WANTED, a number of Representatives with Chemists' and Patent Medicine Vendors' connection in Leeds and district to carry an extensively advertised line; liberal commission; interviews in Leeds. 29/26, Office of this Paper.

SITUATIONS WANTED.

RETAIL (HOME).

A.A.A.A.—QUALIFIED lady; 24; Scot; free now; Dispensing, Counter, Window-dressing, Photography. "Chemist," 9 Endsleigh Gardens, W.C.1.

A.A.A.A.—COMPETENT, experienced Assistant; unqualified; Public School; 26; height 6 ft.; active and energetic; recommended as honest, sober, reliable; disengaged. L. Flatman, Tregonwell Road, Minehead, Somerset.

A.A.A.—QUALIFIED, 22, tall, good appearance and personality, honest, hard working, very steady habits, desires permanency, Manager or Assistant, in busy business; accustomed to heavy Dispensing and Counter; first-class references obtainable. E. Palmer, "Qupana," Greenhill, Kidderminster.

A.A.A.—ASSISTANT, unqualified, Scot, 28, desires Locum or permanent berth; London or near; 11 years' experience; recommended by R.P.U.; free October 3. "Mac," 76 Hillfield Road, N.W.6.

A.A.A.—ADVERTISER; 40; unqualified; experienced; 5 ft. 9 in.; abstainer; Locum; permanency preferred; disengaged. Alexander, 189 Southampton Street, S.E.5.

A.A.—M.P.S., 26, free after October 11, desires re-engagement; permanency; extensive London and provincial experience; excellent references. L. Baker, 103 Listria Park, N.16.

A.A.—MANAGER or Assistant; qualified; 23; capable, energetic and trustworthy; 5½ years' London and provincial experience; disengaged October 5. Harris, 23 Charles Street, Brighton.

A.A.—QUALIFIED Manager, 36, Scot, proved capable business builder, modern ideas, seeks responsible engagement; Middlesex, London suburbs; thoroughly experienced all branches; keen, ambitious worker; sole charge. 39/26, Office of this Paper.

A.—QUALIFIED Chemist requires post; Locum or permanent; smart appearance; excellent references. 34/3, Office of this Paper.

A.—LADY (referred one subject) desires part- or full-time post during October; Dispensing and Counter; London. 37/10, Office of this Paper.

A.—QUALIFIED, 28, tall, London and provincial experience, which covers all branches Retail, desires post, Manager or Assistant; London or suburbs preferred, not essential; available short notice. 39/18, Office of this Paper.

A CHEMIST, having disposed of his own business, is pleased to recommend his late manager for a responsible position. "W. J. C.," 81a Acre Lane, Brixton, S.W.2.

A CHEMIST, qualified, 25, requires permanency; any district of London or Southern Counties. "Chemist," 58 Queen's Road, Wimbledon, S.W.19.

A QUALIFIED lady, 23, desires post in London or W. London suburb; excellent West-End experience; free now. "S.," c/o 4 Moorfields, E.C.2.

A SQUARE-TRAINED qualified Pharmacist, age 22, desires post in London; West End or City preferred; good-class Dispensing and Counter experience; disengaged. Sutton, 23 Tennyson Avenue, Scarborough.

A YOUNG, qualified Chemist, tall, energetic, desires position as Manager or Assistant; Northern County preferred; accustomed to quick N.H.I.; excellent experience, Counter, Dispensing, Display, Photographies, etc.; highest references; moderate salary. J. Scott, Netherfield Road, Guiseley, Leeds.

A YOUNG, qualified Chemist desires engagement as Manager; Locum or permanent; varied experience, Dispensing, Counter, Window-dressing, etc.; good references. "Leicester," 38/21, Office of this Paper.

A YOUNG, qualified Manager desires post; capable controlling staff and organiser with business ability; permanency or one with view to succession. 38/3, Office of this Paper.

A CTIVE; unqualified; experienced; middle-aged; reliable Dispenser; Stock; successful Manager; Locum, permanent. Fletcher, 91 Duncombe Road, Ilford, N.19.

A DVERTISER; 39; unqualified; 20 years' varied experience; conversant with large Private and N.H.I. Dispensing; good Window-dresser and Salesman; at present on Locum; free October 1; excellent reference. "Phenazone," 71 Cranworth Road, Worthing.

A S Manager or Senior; unqualified; 12 years' experience; capable, energetic, trustworthy; excellent references; free one week; moderate salary. Smith, 6 Langleigh Terrace, Etracombe.

A SSISTANT (unqualified) desires change; London district preferred; present berth 3 years; age 23; tall; good all-round experience, Dispensing, Counter and Photography; good Window-dresser; well recommended; excellent references. S. Hallam, c/o E. D. John, 118 Cowley Road, Uxbridge, Middlesex.

A SSISTANT, unqualified, desires post in or near London; 7 years' excellent experience in all departments; responsible position preferred. "Disengaged," 60 Parrock Avenue, Gravesend, Kent.

A SSISTANT (Part I); 5 years' Retail experience; West End and Chelsea. Vince, "Brookside," Gt. North Road, Finchley.

A SSISTANT, unqualified, married, 31, requires permanency in good-class pharmacy; 17 years' experience in all departments of the business; keen, energetic, and reliable; disengaged 24/10/31. Barnes, 189 High Street, Deptford, S.E.8.

A SSISTANT; capable right-hand man; 25; abstainer; tactful Salesman; Display man; organiser; now; recommended; permanency; London. Gallyon, 30 Isla Road, Plumstead, S.E.18.

A SSISTANT desires permanent position; good Dispensing and Counter experience (Part I); good references; energetic. Williams, "Craigwen," Bridge Street, Aberystwyth.

A SSISTANT; 27; good general experience; qualified; free October 19. C. O'Brien, 49 Hawley Road, N.W.1.

A SSISTANT, unqualified, seeks permanency; London, Midland and West Country experience; 25; enthusiastic; capable all-round man. "L. C.," 3 Hammet Street, Taunton.

A SSISTANT, unqualified, 22, requires situation; tall; smart appearance; good address; Counter, Dispensing, Photography; good experience; excellent references. Philp, 20 St. Hilda's Road, Griffithstown, near Pontypool, Mon.

A SSISTANT; tall; 16 years' experience; Counter, Dispensing, Photo, Ciné and Display; now disengaged; preferably N.E. Coast. Richardson, 7 Grosvenor Road, Linthorpe, Middlesbrough.

A SSISTANT, age 23, desires post; unqualified; excellent West-End experience and references; all branches; good appearance; disengaged. 37/38, Office of this Paper.

A SSISTANT, unqualified, 24, requires position; 7 years' experience in Dispensing, Photography, Window-dressing, Counter and Optical work; excellent references; disengaged September 27. "Competent," 37/28, Office of this Paper.

A SSISTANT, tall, 8 years' all-round experience, speciality Dispensing, awaiting result of Referred Subject Qualifying Examination, requires temporary or permanent position anywhere; any fair proposition considered; excellent references. 39/11, Office of this Paper.

A SSISTANT; keen and energetic; Manufacturing, Dispensing, Photography. Pierce, 49 Lugley Street, Newport, Isle of Wight.

A SSISTANT, 22 (Part I), keen, competent Dispenser and Salesman, desires situation; Edinburgh or South Scotland; excellent references. 39/36, Office of this Paper.

C APABLE Junior (19½) desires permanency; 4 years' experience; sound knowledge Dispensing (private and N.H.I.), Counter, Photo; disengaged; references; London preferred. "K.," 47 Aldbourne Road, W.12.

C HEMIST'S Assistant (lady); well up Counter, Dispensing, etc.; disengaged soon. "Dispenser," 38/13, Office of this Paper.

CHEMIST; qualified; first-class experience; reliable; Locums or permanency; Wholesale or Retail. Preston, 3 Old-castle Avenue, Withington, Manchester.

CHEMIST-OPTICIAN, 36, just disposed of two businesses, desires situation; Locum or permanent; good all-round man with plenty of experience; keen Stock-keeper and Buyer; house attached if possible, but not essential; anywhere. Apply 37/36, Office of this Paper.

DISENGAGED.—Well-educated Pharmacist, 24, requires situation; London area preferred, but not essential; good appearance and address; useful experience; highly recommended. "M.P.S.," "Aldeburgh," Waldegrave Road, Strawberry Hill, Middlesex.

DISENGAGED; Locum or Assistant; West-End and Country experience. Arthur, 62 Caldecot Road, Denmark Hill, London, S.E.5.

DISPENSER.—Doctor's daughter (Hall), excellent experience, requires work; whole or part time; S.W. or W. districts; moderate salary. Whidborne, 39 South Eaton Place, S.W.1.

EAST ANGLIAN, 25, qualified, competent and trustworthy, requires post immediately; good all-round experience; excellent references; go anywhere. "M.P.S.," 23 Kitchener Street, King's Lynn.

GENTLEMAN; M.P.S.; middle-aged; Locum (or any capacity) moderate hours, salary £3 10s. per week; disengaged October 11. "S.," 32 Steyne Gardens, Worthing.

IMPROVER; lady; 3 years' experience; Counter, Stock, Dispensing; disengaged; Eastern County preferred. Stevens, c/o Wilson, Chemist, Stowmarket.

LADY Dispenser desires post; experienced; quick; knowledge Book-keeping, Typing; drive car; London district preferred. Burrell, Maltese House, Chelmsford.

LADY Assistant (Hall), 8 years' excellent all-round experience. In Dispensing and N.H.I. and Counter in London and districts, desires post, Chemist or Doctor; pleasant personality. "Radix," 26 Lyndhurst Gardens, Newbury Park, Ilford, Essex.

LADY Dispenser (Hall), last 10 years Retail experience, requires post with Chemist, South London district. "D.B.," 57 Denmark Road, Carshalton.

LADY, 24, requires temporary or permanent position; good Dispensing and general experience. "D.," 14 Tennyson Avenue, Twickenham.

LADY, passed Part I, desires position; permanency or Locum; good Dispensing and Counter experience. Spence, 18 Longley Road, Tooting. Phone: Streatham 5760.

LADY Dispenser (Hall) requires post, Chemist, Doctor or Institution; 4 years' excellent experience; Dispensing and Book-keeping. "M.D.," 17 Tulsemere Road, West Norwood, S.E.27. Phone: Streatham 6809.

LADY M.P.S. requires position; part-time, whole or Locum; excellent experience and references. "Pharmacist," 252 Elgin Avenue, W.9.

LADY Assistant (unqualified); 9 years' experience; Dispensing, Retail; Birmingham or Midlands. N. Fellows, 16a Carpenters Road, Loughborough, Leicestershire.

LADY M.P.S., 26, good references, 5 years' qualified experience, desires Dispensing post. Williams, 77 Freshfield Road, Brighton.

LADY M.P.S., 25, Scottish trained, London experience, requires post; London or near; good references; interview; disengaged soon. 39/3, Office of this Paper.

LIVERPOOL AND DISTRICTS.—Chemist-Optician's Assistant (F.I.O.) seeks situation; unqualified; 6 years' experience, Optical, N.H.I. Dispensing; smart Salesman; good knowledge of Surgical and Photographic; excellent references. 35/40, Office of this Paper.

LIVERPOOL.—Student open to evening and Saturday employment; good experience Dispensing, Counter, Window-dressing. "Calumhae," 153 Smithdown Road.

LOCUM, part time or management; over 30 years' experience; "not registered"; Dispensing, Counter, Stock, Books, Prescriber; used heavy Panel. "G.," 130 Scott-Ellis Gardens, N.W.8.

LOCUM; qualified; registered R.P.U.; open for engagements from September 28. Lane, 2 Manton Way, Galpins Road, Thornton Heath.

LOCUM or permanency; qualified Pharmacist and Optician; I. keen, capable, conscientious; disengaged October 1; F.S.M.C., F.B.O.A. (Hone), registered J.C.Q.O.; abstainer. Ellis, c/o Allison, Ltd., Central Buildings, Bognor, Sussex.

MANAGEMENT of business with turnover not less than £60 per week wanted by experienced qualified Manager, age 30, now managing similar business and increasing same; wage £6 10s. per week and commission on increase; could be free one month. 36/34, Office of this Paper.

MANAGER or Locum; qualified; 44; good Dispensing and Counter experience; disengaged. "Chemist," 22 East Acton Lane, London, W.3.

MANAGER, 35, qualified, fully experienced, desires permanency or locum; town or country. "Chemist," 5 Chelsham Road, Clapham, S.W.4.

MINOR Student at the Square open to evening and Saturday employment; very good experience in first-class business; Dispensing, Counter, Window-dressing and Photography. "Mac.," c/o J. H. Taylor & Son, Chemists, St.-Annes-on-Sea.

M.P.S., F.S.M.C., F.I.O. (Supplemental also), age 28, Manager or Assistant (not "cover"); requires position as "Aplanat," 23 Highfield Road, Dartford, Kent.

M.P.S., 25, tall, qualified 1928, 3 years' London experience, seeks situation, preferably with Private Chemist, with view to succession later; highest references. 35/39, Office of this Paper.

M.P.S., 27, desires post, Manager or Assistant; Scotland preferred, not essential; 13 years' experience; provincial, West London and Colonial; excellent testimonials. Johnston, 57 Gladstone Place, Aberdeen.

M.P.S., 24, recently qualified, desires progressive post; London, provincial and seaside experience; all-round knowledge, Photos; Windows, Counter; moderate salary for start. "Pharmacist," 15 Beauchamp Road, Lavender Hill, S.W.11.

M.P.S., 25, requires position as Manager or Senior Assistant; London area; excellent all-round experience; good appearance and address; interview essential. 37/20, Office of this Paper.

M.P.S., tall, good appearance and address; 25; single; excellent experience and references; used to City; any high-class business. Wall, 218 Boldmere Road, Wyde Green, Birmingham.

M.P.S., 26, tall, good appearance, desires post as Assistant or Manager; 5½ years' experience Family and Agricultural business; Midlands or North. "Chemist," Ivanhoe Villa, Ashby-de-la-Zouch.

M.P.S., 32, tall, married, seeks progressive permanency; any suitable capacity; 10 years' varied experience since qualifying; used to management. 38/2, Office of this Paper.

M.P.S., 25, desires permanency immediately; 6 years' excellent references. 38/26, Office of this Paper.

PART or whole time; 12 years' City and West-End experience; S.E. district. Crowther, 18 Elm Road, Beckenham.

PART-TIME (evenings and Saturdays); Part II Student; 6 years' London experience, all branches; age 22. 39/19, Office of this Paper.

QUALIFIED lady, disengaged, requires permanency; Hospital or Retail; excellent references; Birmingham district. 35/28, Office of this Paper.

QUALIFIED Chemist, age 22, height 6 ft., good address, desires post; 5 years' excellent all-round experience; well recommended. W. Clegg, 13 Falkland Avenue, Rochdale.

QUALIFIED Chemist, age 24, desires position in London; experienced in all branches; excellent references; free immediately. John I. Roland, 341 High Street North, E.12. Phone: Grangewood 2161.

QUALIFIED; 22; energetic; sound experience in all branches; good appearance; highest references. Lee, 1 Martin Road, Slough.

QUALIFIED; Manager or Assistant; aged 26; Counter, Dispensing, Prescribing, all-round managerial experience; seeking change. Please state terms. Highly recommended. "Qualified," c/o Lyons, Chemist, 182 Coldharbour Lane, S.E.5.

QUALIFIED lady, 25, with high-class Retail experience; disengaged; Locum or permanent. Harris, 8 Kerrison Road, W.5. Ealing 4063.

QUALIFIED Man seeks a permanency; high-class West End and provincial experience; October 8. York House, College Road, Maldenhead.

QUALIFIED Manager or Locum; N.H.I. W. Thorley, 27 Crouch Hill, N.4.

QUALIFIED Chemist; middle-aged; energetic; expert Dispenser; Hospital, Surgery or Retail; small salary. P.C.B. 6/13, Office of this Paper.

RELIEF OR LOCUM.—Reliable Managing Assistant available for Tuesdays and Thursdays (Mondays by arrangement); day or half-day booked; 30 years' experience; retaining present berth. J. E. Franklin, 67 Finborough Road, S.W.10.

SOUTH-EASTERN COUNTIES.—Pharmacist, young, tall, and of good appearance, excellent Window-dresser, accurate Dispenser, tactful Salesman, desires post as Senior or Branch Manager. Neal, 97 Castle Road, Tipton.

S.E. LONDON.—Manager or Assistant; unqualified; dependable; 25; permanency; unquestionable references; now. "G.," c/o Miss Williams, 12 Admaston Road, Plumstead.

SMART ASSISTANT, quick Salesman, age 25, desires change; Counter, Dispensing, up-to-date Window-dresser, Photography, Practopedics; capable of taking charge; experience, London, City, provincial; good address; height 6 ft. 1 in. Jolliffe, 32 St. Mary's Road, Canonbury, London, N.1.

TEMPORARY, Part-time; active; competent; thoroughly experienced; moderate terms. "Chemicus," 55 Clarence Street, Gt. Clowes Street, Manchester.

UNQUALIFIED desires situation within daily travelling facilities as Locum or permanency; good all-round experience; competent; reliable; energetic; tall; single; abstainer; successful Prescriber. Howard, 30 Pimlico, Ilkerton (Derby).

UNQUALIFIED Assistant, tall, 9 years' experience, Counter, Dispensing, requires permanency; free now. "Statim," 147 Kennington Park Road, S.E.11.

CLEAR OUT—your Old or Damaged Stock of Photo Goods
Why keep them any longer? Turn them into CASH.
I GIVE BEST PRICES for Old Films (damaged, fogged or expired dates); Packet Papers. Cards (any sizes). Old Photo Goods or Cameras. Bromide Papers. Plates (all sizes, all makes). Send any goods in the photo line. I buy all, good or bad. Cash per return. A good price for all Cameras. Send them along.
S. E. HACKETT, 23 July Road, Liverpool

UNQUALIFIED Assistant; 28; 13 years' all-round experience. Counter, Window-dressing and Dispensing; disengaged; tall and of good appearance. Tuck, 71 Wellesley Road, West Croydon, Surrey.

UNQUALIFIED Assistant, age 22, desires progressive situation; 6 years' experience. Window-dressing, Counter, Dispensing and Photography; wage £2 10s. per week; could be disengaged in one week. Apply 36/35, Office of this Paper.

UNQUALIFIED; 24; first-class Dispensing experience; good references, City, West End and country; disengaged. C. Hunter, 7 Redburn Street, S.W.3.

UNQUALIFIED Assistant, 21, desires post; Manchester or suburb; not essential; general experience; Dispensing, Counter, Photography; excellent Window-dresser, and trustworthy. Write, George Pickstock, 4 Albert Place, Northwich, Cheshire.

UNQUALIFIED; 20 years' experience in Dispensing, Counter and Photography; disengaged October 1; Locum accepted. Harris, 40 St. Leonards Road, Weymouth.

YOUNG Lady Assistant-Dispenser; whole or part-time (Hall); good worker; easy distance of Brighton. 8 Prestonville Road, Brighton.

YOUNG, qualified gentleman seeks situation as Assistant in high-class pharmacy; excellent references; London, Home or Midland Counties. 38/10, Office of this Paper.

WHOLESALE.

A FIRST-CLASS Representative, specialising sales, propaganda, administrative ability, life experience pharmacy, desires progressive offers from established houses. 39/9, Office of this Paper.

A REPRESENTATIVE, with strong extensive connection whole of London Chemists and Hairdressers, has excellent proposition for a good Drug and Sundries House; proof of salesmanship and own car. Particulars, 37/23, Office of this Paper.

A SUCCESSFUL well-known Representative, Yorks, Lancs, Cheshire, etc., offers efficient representation; established lines only; state terms; commission only not entertained. 37/3, Office of this Paper.

ADVERTISER, young, energetic salesman, own car, with extensive connections amongst Chemists and Druggists in Midlands, North of England and Scotland, desires Sole Agency, on commission basis, for Proprietary lines; only first-class propositions entertained; highest references. 33/28, Office of this Paper.

ADVERTISER seeks post as Travelling Representative; 24; well educated; drive car; no wholesale experience, but keen and enthusiastic salesman. Write to 39/34, Office of this Paper.

BRUSHES.—Representative, long experience, good London connection well known, seeks good house, Nail, Tooth, etc., coloured or bone; able make special lines. "Chemist," 35 Richmond Road, W.14.

CAPABLE, energetic, 28, wishes to represent reputable house in London area; 12 years' high-class Retail experience. 38/9, Office of this Paper.

DISENGAGED.—Laboratory, Wets, Dries or any position of trust; 15 years' experience. Lyner, 54 Prospect Road, Leicester.

EXPERIENCED Representative, connection London and Suburban Chemists, Hairdressers, Doctors, Stores, requires engagement with good House, Drugs, Toilets, etc. P.C.B. 6/16, Office of this Paper.

PH.C., 23, wishes to enter the Wholesale; good Retail experience; well recommended; progress assured. 38/20, Office of this Paper.

QUALIFIED Pharmacist, 27, tall, experienced Medical, Dental, Institutional and Pharmaceutical propagandist, good Salesman, desires to represent or an administrative position with Drug or Speciality House of repute. 39/20, Office of this Paper.

QUALIFIED Pharmacist, 25, excellent experience Medical propaganda, requisite personality and smart appearance, desires represent first-class house; knowledge Therapeutics and Anatomy; London or South Coast; can drive car. 38/28, Office of this Paper.

RELIABLE Assistant seeks engagement 20 years' experience Manufacturing, Counters and Dispatch; first-class references; a real worker; disengaged. 37/25, Office of this Paper.

SUBSTANTIAL investment in return for executive position of scope with firm operating in or near London; young Public Schoolman, with valuable business and administrative experience, plus Pharmaceutical training, desires to join Wholesale House, Manufacturing concern or chain of shops. P.C.B. 5/31, Office of this Paper.

WORKING Foreman, young, seeks situation; 20 years' good all-round experience; Manufacturing Pharmaceutical and Toilet Preparations, etc. "L. B.," 51 Farmilo Road, Leyton, E.17.

YOUNG man, 23, requires position in Laboratory of Manufacturing Chemist; Matric.; educated to Inter. B.Sc. standard; knowledge Pharmacy and French. "Chemist," 42 Ruby Road, E.17.

MISCELLANEOUS.

A PHARMACY, fitted with reconditioned 5-ft. Showcase front Counter, 9-ft. Drugfitting with mahogany-fronted Drawers, 4-ft. mahogany Wall Showcase, 4-ft. 6-in. mahogany Dispensing Screen, drawers at back, mahogany Perfume Case and Desk, £60 the Set. Many other Sets in stock to suit any shop. Call and make your selection. Upright and Flat Counter Cases, Silent Salesmen, All-glass Counters, Display Stands, Swan-neck and Pear-shape Carboys, Recessed Label Shop Rounds, Electric Signs, Check Tills, etc., cheap. RUDDUCK & CO., 219 Old Street, London, E.C.1.

CHEMISTS' FITTINGS.—We hold an immense stock of Drug Fittings, Dispensing Screens, Glass Fronted Counters, Perfumery Cases, Nests of Drawers, Wall Cases, Silent Salesmen, Upright and Flat Counter Cases, Plate-glass Counters, Cash Tills, Display Stands and Glass Shelves, etc., ready for immediate delivery at competitive prices. Write or call for List. F. MAUND & E. BERG (SHOWCASES), LTD., 175/9 and 336 Old Street, London, E.C.1.

CHEMISTS' FITTINGS.—Complete set in mahogany. Complete Drugfitting, 14 ft. long and 10 ft. long, 36 drawers; Wallcase, 8 ft. long; Serving Counter, case front, 10 ft. long; Dispensing Screen, mirror centre, 7 ft. long; two 4 ft. Nests Counter Drawers; cheap to clear; also set in polished oak. Sketches by return. GEORGE COOK, The Working Shop-fitter (over 40 years' experience), 27 Macclesfield Street, City Road, E.C.1.

LAKE DISTRICT.—For Sale, valuable mahogany Shop Fittings by Maws, including Show Cases, Cabinets, Serving Counter, Drug Range of 94 drawers and another ditto, all of excellent quantity; also Weighing Machine, several Carboys, and two Cast Iron Cylinders for Carbonic Acid Gas. Full particulars from and offers to WILLIAM J. McVEY, F.A.I., Royal Square, Windermere.

PHARMACY, ready fitted, stock been cleared, fittings remain. Glass-fronted Counter, 8 ft. x 3 ft. 6 in., mahogany, drawers at back; Drug Run, 12 ft., 37 drawers and four bottle lockers, mahogany fronted and glass labels; Dispensing Screen, mahogany, 8 ft. x 6 ft. high; Wall Cases, Cupboards, Window Casing, 9 ft., with mirrors, two sets Scales, Mortars, etc.; no reasonable offer refused for quick sale. Apply SANSOM, Rosemary Pharmacy, Mansfield.

SHOPFITTINGS.—"The more you show, the more you sell." Counteract bad trade by one of PHILIP JOSEPHS & SONS, LTD., Showcases. Send your wants to 90/2 St. John Street, Clerkenwell, London, E.C.1. "Pharmacy Fitters for Over a Century."

EXCHANGE COLUMN.

FOR DISPOSAL.

WHAT OFFERS?—2 oz. bottles unopened Fine Musk Grain (Bush). "D.," 192/810, Office of this Paper.

"AUTOWAY," Cash Till, set of three upright Counter Cases, 8 ft. and 10 ft. bent glass Counter Cases, etc. "Abbotsford," 112 Bennington Road, Leith.

AUTOWAY WEIGHING MACHINE, dial face model, excellent appearance, perfect order; cost £30; accept £10 or near offer; real bargain. 39/10, Office of this Paper.

THREE NATIONAL CASH TILLS for Sale, one brass and two mahogany, in perfect condition; take amounts up to 30s.; complete with till rolls, etc. Write C. Newton, 184 Venner Road, Sydenham.

WANTED.

OPTICAL TEST CASE, also medium Pestle and Mortar. Stone, Chemist, Verwood, Wimborne.

CAMBRIDGE ROCKING MICROTOME. Price to British Drug Houses, Ltd., Graham Street, London, N.1.

WANTED IMMEDIATELY MACHINE for compact powders or single punch Tablet Machine suitable for converting. Particulars and price to 192/811, Office of this Paper.

GOWER, Chemists' Bookseller, 41 Voltaire Road, Clapham, wants Pharmaceutical Books, including B.P., Pharmaceutical Formulas, B.P.C., P.J.F., Optical Books, Materia Medica Collections.